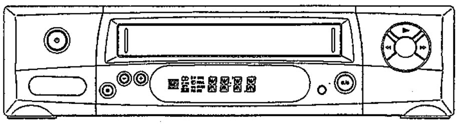
Video Cassette Recorder Deck: Turbo Drive APOLLO 10

VR500/02

Service
Service
Service



Service Manual

Evolution: AA

(GB) For technical data reference is made to the Service Manual of APOLLO 10 **4822 726 15549.**
The present Manual states only the differences.

(D) Für technische Daten siehe Service Manual APOLLO 10 **4822 726 15549.**
In dieser Dokumentation sind nur die Unterschiede enthalten.

(NL) Voor de technische gegevens wordt verwezen naar de Service Documentatie van de APOLLO 10 **4822 726 15549.**
Alleen de verschillen worden in deze documentatie gegeven.

(F) Pour ce qui est des caractéristiques techniques veuillez vous référer à la Documentation Service du APOLLO 10 **4822 726 15549.**
Cette documentation ne reprend que les différences.

(I) Per i dati tecnici veda il Manuale di Servizio di APOLLO 10 **4822 726 15549.**
La presente documentazione contene soltanto le differenze.

(E) Para los datos técnicos véase el manual de servicio de APOLLO 10 **4822 726 15549.**
La presente documentación contiene sólo las diferencias.

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Veiligheidbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen identiek aan de gespecificeerde worden toegepast.

Le prescrizioni di sicurezza richiedono che l'apparecchio siaricondoto alle condizioni originali e che siano usati ricambi originali.

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utisées les piéces de rechange identiques à celles spécifiées.

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de requesto sean idénticas a las originales.

Published by LE9907 Videq Service Department Printed in the Netherlands © Copyright reserved Subject to modification 3103 785 20140

PHILIPS

Features

	Low power standby [W]	Cable tuner, Hyperband	Splitter for France	NTSC playback in color	Sound system: mono	Sound system: stereo	Sound system: Nicam	Video heads	FM-audio heads	Turbo Drive	Tape lenghts recognition	Tape counter: linear relative	Tape counter: linear (time used)	VISS next/previous index search	Studio Picture Control	Tuning presets	Backup of presets (year)	Number of events / month	Backup of clock (hrs)	GEMSTAR SHOWVIEW	VPS+PDC	Daily/weekly	FOLLOW TV (analog)	Direct record (WYSIWYR analog)	OTR (one touch record)	Record-prepared (from SCART 2)	Longplay [8 h]	Time download	Child lock	VCR1/VCR2 selection	Number of scart connectors	Audio out: cinch (rear)	Audio / Video in: cinch (front)
VR500/02	<6	✓		✓	✓	✓		4	2	✓	✓		✓	✓	✓	99	1	6	7	✓	✓	✓	✓	✓	✓	✓	✓	✓	✓	no	2	✓	✓

Show View is a Trademark of Gemstar Development Group

Survey of sets and PCB´s

	AMB - MOTHERBOARD																										TAPE DECK			
	-QMB layout	-PS Power supply	-HA Head amplifier	-DE Deck electronics	-DC Display control	-VS Signal electronic	-AL Audio linear	-IO IN/OUT	-VS-SEC Signal electronic	-FV Frontend	-AF Audio FM	-OSD, FOME, VPS Part	**Deck Control-µP Pos. 7400**	**Display Control-µP Pos. 7201**									**-CINCH Board rear**	**-ACP1 CINCH Board front**	**-QNIC NICAM Board**	**-QKP21 Shuttle Board**	2 video heads, PAL, SECAM	2 video heads, longplay PAL	4 video heads, PAL, SECAM	4 video, 2 audio heads, PAL, SEC
Page 3 -	7	8	9	10	11	12	12	13	14	15	16	17	10	11									6/7	19	19	19	**Chapter 4**			
	PAL B/G	PAL I	SECAM BG	SECAM L/L'	MESECAM								QTDP2-xU	QDCE1-xP	QDCE2-xU	QDCE3-xU	QDCH1-xP	QDCH2-xU	QDCH3-xU	QDCH4-xU	QDCH5-xU		CINCH rear	CINCH front	QNIC	QKP21	WDQT-P2/0	WDQT-P2/0LP	WDQT-S4/0	WDQT-S4/2
VR500/02	✓												✓					✓					✓	✓						✓

Differences in respect to the basic manual (page 5-1/2)

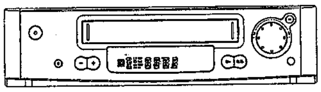
Type	**Reference basic manual**	**Front panel**	**Lift Flap**	**Remote control**	**Direction for use**
		Item 20	Item 20/6	Item 151	Item 152
VR500/02	VR685/02	**3103 138 89970**	**3103 178 27260**	**4822 219 10498** RT184/101	**3103 166 24450** (DE,FR,IT,NL)

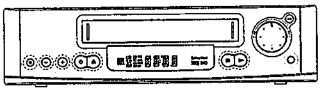
Video Cassette Recorder **Deck: Turbo Drive** **APOLLO 10**

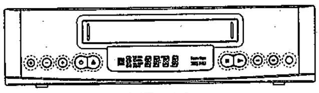
Service
Service
Service

VR285/02/05/07/13/39/58
VR286/02
VR287/02/07/13/39
VR485/02/39/58
VR487/02/39/58
VR685/02/07/13/16/39/58
VR686/02/13/39

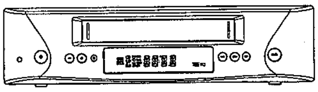
SB110/03
SB115/03
SB215/02
SB615/03/11


VRx87


VR686


VR286

VRx85


SBxxx

Service Manual

Evolution: AA

GB For chapters 2 and 4 reference is made to the Service Manual of QUEEN volume **4822 726 15512.**

D Für die Kapiteln 2 und 4 siehe Service Manual QUEEN volume **4822 726 15511.**

NL Voor de hoofdstuk 2 en 4 wordt verwezen naar de Service Documentatie van de QUEEN volume **4822 726 15514.**

F Pour ce qui est des chapitres 2 et 4 veuillez vous référer à la Documentation Service du QUEEN volume **4822 726 15513.**

I Per i capitoli 2 e 4 veda il Manuale di Servizio di QUEEN volume **4822 726 15515.**

E Para los capítulos 2 y 4 véase el manual de servicio de QUEEN volume **4822 726 15516.**

Survey of versions:

/02/03	PAL B/G, VPS/PDC
/05	PAL I, UK
/07	PAL I, Ireland
/11	PAL B/G Belgium
/13	PAL B/G, Nordic
/16	PAL B/G, Spain
/38/39	SECAM L/L', PAL B/G, PAL I
/58/59	PAL/SECAM B/G, D/K

Survey of remote controls:

VR285/02/05/07/13/58, VR485/02/58 SB110/03, SB115/03 SB215/02, SB615/03/11	**RT183/201**	4822 219 10496
VR286/02, VR287/02/07/13 VR487/02/58 VR685/02/07/13/16/58, VR686/02/13	**RT184/101**	4822 219 10498
VR285/39, VR287/39, VR485/39 VR487/39, VR685/39, VR686/39	**RT184/104**	4822 219 10501

Safety regulations require that the set be restored to its original condition and that parts which are identical with those specified be used.

Veiligheidbepalingen vereisen, dat het apparaat bij reparatie in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen identiek aan de gespecificeerde worden toegepast.

Le prescrizioni di sicurezza richiedono che l'apparecchio siaricondoto alle condizioni originali e che siano usati ricambi originali.

Bei jeder Reparatur sind die geltenden Sicherheitsvorschriften zu beachten. Der Originalzustand des Gerätes darf nicht verändert werden. Für Reparaturen sind Originalersatzteile zu verwenden.

Les normes de sécurité exigent que l'appareil soit remis à l'état d'origine et que soient utisées les piéces de rechange identiques à celles spécifiées.

Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de requesto sean idénticas a las originales.

Published by LE9864 Videq Service Department Printed in the Netherlands © Copyright reserved Subject to modification 4822 726 15549

PCS 93721

PHILIPS

PHILIPS

TABLE OF CONTENTS

Page

CHAPTER 1
TECHNICAL DATA AND FEATURES

Front page 1-1
Table of contents 1-2
Survey of sets and features 1-3
Survey of sets, PCB's and μP's 1-4
Technical specifications 1-5
Safety instructions 1-6/7
Description of the system for publication of changes 1-8
Front/rear view of the se tand Remote control 1-9/13
List of abbreviations 1-14/16

CHAPTER 2
TOOLS FOR ERROR DIAGNOSIS

This chapter should be used in conjunction with the Service Manual QUEEN volume VR171.

Servicing of SMDs
Dismantling of the set
Circuit descriptions
IN/OUT Block diagram
Error diagnosis system
Adjustment procedures

CHAPTER 3
PRINTED BOARDS

Wiring diagram 3-1
Block diagram **video** part 3-2
Block diagram **audio** part 3-3
Block diagram **digital** part 3-4
Block diagram **power supply** part 3-5

Mother board QMB

PCB drawing mother board **QMB** 3-6/7
Circuit diagram **PS** 3-8
Head amplifier-**HV/HA** circuit diagram 3-9
Deck electronics-**DE** circuit diagram 3-10
Display control-**DC** circuit diagram 3-11
Video/Chroma-**VS** circuit diagram 3-12
Audio linear-**AL** circuit diagram 3-12
In/Out-**I/O** circuit diagram 3-13
Secam-**VS** circuit diagram 3-14
Frontend-**FV** circuit diagram 3-15
Audio FM-**AF** circuit diagram 3-16
Circuit diagram **OSD, FOME, VPS** 3-17

QNIC board

Circuit diagram **QNIC** 3-18
PCB drawing **QNIC** 3-19

Shuttle board

PCB drawing/Circuit diagram **QKP21** 3-19

Connector board

PCB drawing/Circuit diagram **ACP1** 3-19
PCB drawing/Circuit diagram **QBOC1, QBOB1, QBOG1** 3-20

Page

CHAPTER 4
TAPE DECK

This chapter should be used in conjunction with the Service Manual QUEEN volume VR171.

Deck parts replacement

Auxiliary tools for deck adjustment
Deck layout diagrams
Lift
Head disc
A/C Head
Threading motor
Capstan motor
Pressure roller
Roller unit right
Roller unit left

Adjustments

Tape path
„Roller unit left; roller unit right"
A/C Head
Horizontal distance
Brake band
Tape tension adjustment
Friction clutch control
Reverse brake control
Top view, Underside view

Exploded view

Mechanical drive parts list 4-1
Drive top view 4-2
Drive underside view 4-3
Exploded view of cabinet parts set 4-4

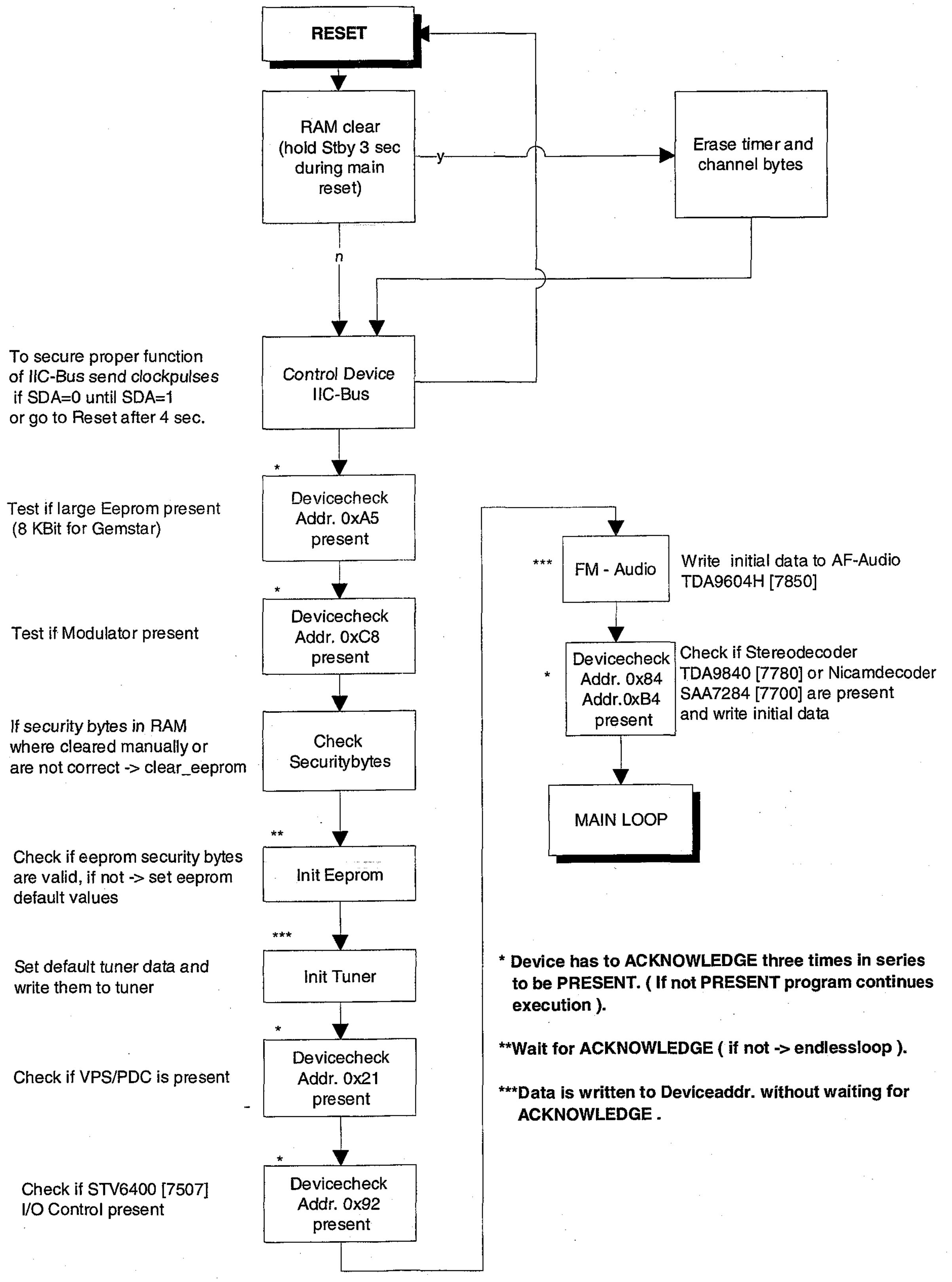
CHAPTER 5
PARTS LIST

Cabinet parts 5-1/2
Mother board **QMB** 5-3/11
QNIC board 5-12
Cables 5-13
Sub moduls 5-13

Features

	VR285/02	VR285/05	VR285/07	VR285/13	VR285/39	VR285/58	VR286/02	VR287/02	VR287/07	VR287/13	VR287/39	VR485/02	VR485/39	VR485/58	VR487/02	VR487/39	VR487/58	VR685/02	VR685/07	VR685/13	VR685/16	VR685/39	VR685/58	VR686/02	VR686/13	VR686/39	SB110/03	SB115/03	SB215/02	SB615/03	SB615/11
Low power standby [W]	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6	<6
Splitter for France					✔						✔		✔			✔						✔				✔					
Sound system: mono	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔										✔	✔	✔		
Sound system: stereo																		✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔
Sound system: Nicam																			✔	✔	✔	✔	✔		✔	✔				✔	✔
FOLLOW TV (analog)					✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
WYSIWYR (analog)					✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Cable tuner incl. S-channels	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Autoinstall (UK)		✔																													
Video heads:	2	2	2	2	2	2	2	2	2	2	2	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	2	2	2	4	4
FM-audio heads (for stereo)																		2	2	2	2	2	2	2	2	2				2	2
Winding time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	260	260	100	260	260
Rewind time E180 [sec]	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	100	170	170	100	170	170
Clever Turbo Drive	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔		
Tape lenghts recognition	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔		
Longplay [8 h]		✔	✔					✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔
Quick view	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Tape counter: linear relative																											✔	✔		✔	✔
Tape counter: linear (time used)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔		
Tape counter: linear (time used/left)																															
VISS next/previous index search	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Frame advance	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔																✔	✔	✔		
Field advance												✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔
Studio Picture Control	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
NTSC (non-standard) playback in color							✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
Tuning presets	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99	99
Number of events / month	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6	6
Daily/weekly	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
GEMSTAR SHOWVIEW	✔			✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
GEMSTAR VIDEOplus+		✔	✔			✔			✔				✔						✔				✔								
OTR	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
VPS / PDC / VPS+PDC (VPDC)	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC	VPDC		VPDC	VPDC	VPDC	VPDC
Record-prepared mode (from SCART 2)	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔			✔	✔	✔
Backup of presets	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr	1yr
Backup of clock	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs	7hrs
Transm.identif. via VPS/PDC	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
Audio: Stereo/HiFi - bilingual																		✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔
Audio dubbing																															
OSD	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔
Child lock							✔	✔	✔	✔	✔				✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔					
16:9 (via Scart pin 8)																															
Audio out: cinch (rear)																		✔	✔	✔	✔	✔	✔	✔	✔	✔				✔	✔
Audio / Video in: cinch (front)																		✔	✔	✔	✔	✔	✔								
Number of scart connectors	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	2	1	1	2	2	2
VCR1/VCR2 selection																															
Time download	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔	✔		✔	✔	✔	✔
Shuttle on front								✔	✔	✔	✔													✔	✔	✔					

Start - up software from the display control - µP


RESET
RAM clear (hold Stby 3 sec during main reset)
y
Erase timer and channel bytes
n
Control Device IIC-Bus
*
Devicecheck Addr. 0xA5 present
*
Devicecheck Addr. 0xC8 present
Check Securitybytes
**
Init Eeprom
***
Init Tuner
*
Devicecheck Addr. 0x21 present
*
Devicecheck Addr. 0x92 present
***
FM - Audio
Write initial data to AF-Audio TDA9604H [7850]
*
Devicecheck Addr. 0x84 Addr.0xB4 present
Check if Stereodecoder TDA9840 [7780] or Nicamdecoder SAA7284 [7700] are present and write initial data
MAIN LOOP

To secure proper function of IIC-Bus send clockpulses if SDA=0 until SDA=1 or go to Reset after 4 sec.

Test if large Eeprom present (8 KBit for Gemstar)

Test if Modulator present

If security bytes in RAM where cleared manually or are not correct -> clear_eeprom

Check if eeprom security bytes are valid, if not -> set eeprom default values

Set default tuner data and write them to tuner

Check if VPS/PDC is present

Check if STV6400 [7507] I/O Control present

*** Device has to ACKNOWLEDGE three times in series to be PRESENT. (If not PRESENT program continues execution).**

****Wait for ACKNOWLEDGE (if not -> endlessloop).**

*****Data is written to Deviceaddr. without waiting for ACKNOWLEDGE .**

Survey of sets and PCB`s with software versions

	QMB - MOTHERBOARD																												
	-QMB layout	-PS Power supply	-HA Head amplifier	-DE Deck electronics	-DC Display control	-VS Signal electronic	-AL Audio linear	-IO IN/OUT	-VS-SEC Signal electronic	-FV Frontend	-AF Audio FM	-OSD, FOME, VPS Part	**Deck Control-µP Pos. 7400**	**Display Control-µP Pos. 7201**								***-CINCH Board rear***	***-ACP1 CINCH Board front***	***-QNIC NICAM Board***	***-QKP21 Shuttle Board***	2 video heads, PAL, SECAM	2 video heads, longplay PAL	4 video heads, PAL, SECAM	4 video, 2 audio heads, PAL, SECAM
Page 3 -	**7**	**8**	**9**	**10**	**11**	**12**	**12**	**13**	**14**	**15**	**16**	**17**	**10**	**11**								**6/7**	**19**	**19**	**19**	**Chapter 4**			
	PAL BG	PAL I	SECAM BG	SECAM L/L'	MESECAM								QTDP2-xU	QDCE1-xP	QDCE2-xU	QDCE3-xU	QDCH1-xP	QDCH2-xU	QDCH3-xU	QDCH4-xU	QDCH5-xU	CINCH rear	CINCH front	QNIC	QKP21	WDQ-P2/0	WDQ-P2/0LP	WDQ-S4/0	WDQ-S4/2
VR285/02	✔												✔		✔												✔		
VR285/05		✔											✔	✔													✔		
VR285/07		✔											✔	✔													✔		
VR285/13	✔												✔		✔											✔			
VR285/39	✔	✔	✔	✔	✔								✔		✔											✔			
VR285/58	✔		✔		✔								✔			✔										✔			
VR286/02	✔												✔		✔											✔			
VR287/02	✔												✔		✔										✔		✔		
VR287/07		✔											✔	✔											✔		✔		
VR287/13	✔												✔		✔										✔		✔		
VR287/39	✔	✔	✔	✔	✔								✔		✔										✔	✔			
VR485/02	✔												✔		✔													✔	
VR485/39	✔	✔	✔	✔	✔								✔		✔													✔	
VR485/58	✔		✔		✔								✔			✔												✔	
VR487/02	✔												✔		✔													✔	
VR487/39	✔	✔	✔	✔	✔								✔		✔													✔	
VR487/58	✔		✔		✔								✔			✔												✔	
VR685/02	✔												✔					✔				✔	✔						✔
VR685/07		✔											✔				✔					✔	✔	✔					✔
VR685/13	✔												✔								✔	✔	✔	✔					✔
VR685/16	✔												✔						✔			✔	✔	✔					✔
VR685/39	✔	✔	✔	✔	✔								✔					✔				✔	✔	✔					✔
VR685/58	✔		✔		✔								✔							✔		✔	✔	✔					✔
VR686/02	✔												✔					✔				✔			✔				✔
VR686/13	✔												✔							✔		✔		✔	✔				✔
VR686/39	✔	✔	✔	✔	✔								✔					✔				✔		✔	✔				✔
SB110/03	✔												✔		✔											✔			
SB115/03	✔												✔		✔											✔			
SB215/02	✔												✔		✔											✔			
SB615/03	✔												✔					✔						✔					✔
SB615/11	✔												✔					✔						✔					✔

GB **TECHNICAL DATA**	D **TECHNISCHE DATEN**	F **CARACTERISTIQUES**	
Mains voltage	Netzspannung	Tension secteur	220 - 240 V, +/- 10%
Mains frequency	Netzfrequenz	Fréquence	45 - 65 Hz
Power consumption:	Leistungsaufnahme:	Puissance absorbée:	mono 12.5 W during operatio HiFi 16 W during operation
without Low Power Standby	Standby	mode veille normal	mono 9.5 W HiFi 11 W
with Low Power Standby	Standby mit geringem Verbrauch	mode veille faible consommation	< 6 W standby
Ambient temperature	Raumtemperatur	Température ambiante	+10°C to +35°C
Relative humidity	Relative Luftfeuchtigkeit	Humidité relative	20 - 80 %
Dimensions	Abmessungen	Encombrement	380 x 260 x 94 mm
Weight	Gewicht	Poids	3,7 kg
Fast forward/rewind time (turbo)	Vor-/Rückspulzeit (turbo)	Temps (re-)bobinage (turbo)	typ. 100s (E180 cass.)
Position of use	Betriebslage	Position d'emploi	horizontally, max. 15°
Video resolution	Video-Auflösung	Puissance absorbée	≥240 lines
Audio	Audio	Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
		Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
		Stereo FM Audio	20Hz - 20kHz (≤3dB)

NL **TECHNISCHE GEGEVENS**	E **DATOS TECNICOS**	I **DATI TECNICI**	
Netspanning	Tensión de red	Tensione di alimentazione	220 - 240 V
Netfrequentie	Frecuencia de red	Frequenza di rete	45 - 65 Hz
Opgenomen vermogen:	Consumo de potencia:	Potenza assorbita:	mono 12.5 W during operation HiFi 16 W during operation
zonder Low Power Standby	sin standby de bajo consumo	in attesa non a basso consumo	mono 9.5 W during standby HiFi 11 W during standby
met Low Power Standby	con standby de bajo consumo	in attesa a basso consumo	< 6 W standby
Omgevingstemperatuur	Temperatura ambiente	Temperatura ambiente	+10°C to +35°C
Relatieve vochtigheid	Humedad relativa	Umiditá relativa	20 - 80 %
Afmetingen	Dimensiones	Dimensioni	380 x 260 x 94 mm
Gewicht	Peso	Peso	3,7 kg
Vooruit/terugspoeltijd (turbo)	tiempo de (re-)bobinado (turbo)	Tempo di (ri-)avvolgimento (turbo)	typ. 100s (E180 cass.)
Gebruikspositie	Posición de uso	Posizione di funzionamento	horizontally, max. 15°
Opplossend vermogen	Resolución video	Risoluzione video	≥240 lines
Audio	Audio	Audio SP: Linear Audio	80Hz - 10kHz (≤8dB)
		Audio LP: Linear Audio	80Hz - 5kHz (≤8dB)
		Stereo FM Audio	20Hz - 20kHz (≤3dB)

Euroconnector (AV1) SCART plug 1

Connection to TV, monitor, projection TV ...

Pin 1	ARO (audio right out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 2	ARI (audio right in)	0,2 V_{rms} to 2V_{rms}	R_{in} 10 kOhm
Pin 3	ALO (audio left out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 6	ALI (audio left in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 7	Blue (out) **)		
Pin 8	Switching output:	(with R_{load} = 10kOhm, C_{load} < 2nF) low: 2 V high: 9.5 V rise time: 5 ms	
Pin 11	Green (out) **)		
Pin 15	Red (out) **)		
Pin 16	Blanking (out) **)	loop through enabled during standby, view-mode	
Pin 19	CVBS II (video out)	1 V_{pp} +1/-2dB	R_{out} 75 Ohm
Pin 20	CVBS I (video in)	1 V_{pp} +3/-3dB	R_{in} 75 Ohm

**) passive loop through from AV2

Euroconnector (AV2) SCART plug 2

Connection to decoder, SAT tuner, video disc, 2nd VCR ....

Pin 1	ARO (audio right out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 2	ARI (audio right in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 3	ALO (audio left out)	500 mV_{rms} +/- 3 dB	R_{out} 1 kOhm
Pin 6	ALI (audio left in)	0,2 V_{rms} to 2 V_{rms}	R_{in} 10 kOhm
Pin 7	Blue (in) *)		
Pin 8	Switching input only	low: 2 V (low) high: 4.5 V (high)	R_{in} 10 kOhm R_{in} 10kOhm
Pin 11	Green (in) *)		
Pin 15	Red (in) *)		
Pin 16	Blanking (in) *)	loop through enabled during standby, view-mode	
Pin 19	CVBS II (video out)	1 V_{pp} +1/- 2dB	R_{out} 75 Ohm
Pin 20	CVBS I (video in)	1 V_{pp} +3/-3 dB	R_{in} 75 Ohm

*) passive loop through to Euroconnector AV1

Cinch Audio/Video input on front panel (OPTION)

Audio:

AINFR (audio right in) red	0.2 V_{rms} to 2 V_{rms}	typ. 500 mV_{rms}
AINFL (audio left in) white	0.2 V_{rms} to 2 V_{rms}	typ. 500 mV_{rms}
Input impedance	47 kOhm	

Video:

VFR yellow	1 V_{pp} + 3 / -3 dB
Input impedance	75 Ohm

Cinch Audio Out Rear (OPTION)

AOUT1R (audio right out) red	500 mV_{rms} +/- 3 dB R_{out}1 kOhm
AOUT1L (audio left out) white	500 mV_{rms} +/- 3 dB R_{out}1 kOhm

This outputs are in parallel with the corresponding outputs on Euroconnector 1.

TUMOD

Modulator:

Frequency range loop through	45 MHz - 860 MHz
Gain: ANT IN - TV OUT	2 dB + 3 / -2 dB
ANT IN - TUN OUT	2 dB + 3 / -2 dB
Switch for RF input attenuation	NO
Frequency range out (tuned by IIC bus)	Ch 21 - Ch55

Tuner:

Frequency range	43 MHz - 860 MHz
for UK	450 MHz - 860MHz
Input voltage max.	< 100 dBµV
min.	> 60 dBµV

Safety instructions

- Safety regulations demand that the set be restored to its original condition and that components identical with the original types be used.

  Safety components are marked by the symbol ⚠
- All ICs and many other semi-conductors are susceptible to electrostatic discharges (ESD). Careless handling during repair may reduce life drastically. When repairing, make sure that you are conneted with the same potential as the mass of the set via a wrist wrap with resistance. Keep components and tools on the same potential.
- A set to be repaired should always be connected to the mains via a suitable isolating transformer.
- Never replace any modules or any other parts while the set is switched on.
- Use plastic instead of metal alignment tools. This in order to prelude short-circuit or to prevent a specific circuit from being rendered unstable.

Remarks

- The direct voltages and oscillograms ought to be measured relative to the set mass.
  EXCEPTION
  At the power supply, the DC voltages and the oscillograms at the primary side are measured to LIVE GND.
- The direct voltages and oscillograms mentioned in the diagrams ought to be measured with a colour bar signal and the picture carrier at 503.25 MHz (C25).
- The oscillograms and direct voltages have been measured in RECORD or PLAY mode.
- The semiconductors, which are mentioned in the circuit diagram and in the parts lists, are fully exchangeable per position with the semiconductors in the set, irrespective of the type designation of these semiconductors.

Sicherheitshinweise

- Die Sicherheitsvorschriften erfordern es, daß sich das Gerät nach der Reparatur in seinem originalen Zustand befindet und daß die zur Reparatur benutzten Ersatzteile mit den Originalersatzteilen identisch sind.

  Sicherheits-Bauteile sind mit der Markierung ⚠ versehen
- Alle IC's und Halbleiter sind empfindlich gegen elektrostatische Entladungen (ESD). Unvorschriftmässige Behandlung von Halbleitern im Reparaturfall kann zur Zerstörung dieser Bauteile oder zu einer drastischen Reduzierung der Lebensdauer führen. Sorgen Sie dafür, daß Sie sich im Reparaturfall über ein Armband mit Widerstand auf dem gleichen Potential, wie die Masse des Gerätes befinden. Alle Bauteile, Werkzeuge und Hilfsmittel sind auf das gleiche Potential zu legen.
- Ein zu reparierendes Gerät ist immer über einen Trenntransformator an die Netzspannung anzuschließen.
- Bei eingeschaltetem Gerät dürfen keine Module oder sonstige Einzelteile ausgetauscht werden.
- Zum Abgleich sind ausschließlich Kunststoffwerkzeuge zu benutzen (keine Metallwerkzeuge verwenden). Dadurch wird vermieden, daß ein Kurzschluß entstehen kann oder eine Schaltung instabil wird.

Anmerkungen

- Die Gleichspannung und Oszillogramme sind gegen Gerätemasse zu messen.
  AUSNAHME
  Beim Netzteil sind die Gleichspannungen und Oszillogramme auf der Primärseite gegen Live GND gemessen.
- Die Gleichspannungen und Oszillogramme angeführt in den Schaltbildern sollen unter folgenden Bedingungen gemessen werden: Farbbalkensignal, Bildträger auf 503.25 MHz (C25)
- Die Oszillogramme und Gleichspannungen sind in RECORD oder PLAY gemessen. Die in den Stücklisten aufgeführten Bauteile sind positionsweise voll auswechselbar gegen die Bauteile in dem Gerät, ungeachtet der etwaigen Typenbezeichungen.

Avertissements

- Les normes de sécurité exigent qu'aprés réparation l'appareil soit remis dans son état d'origine et que soient utilisées les piéces de rechange identiques à celles spécifiées.

  Les composants de sécurité sont marqués ⚠
- Tout les IC et beaucoup d'autres semi-conducteurs sont sensibles aux décharger statiques (ESD). Leur longévité pourrait étre considérablement écourté par le fait qu'aucune précaution n'est prise à leur manipulation. Lors de réparations s'assurer de bien étre relié au méme potential que la masse de l'appareil et enfiler le bracelet serti d'une résistance de sécurité. Veiller à ce que les composants ainsi que les outils que l'on utilise soient également à ce potentiel.
- Toujours alimenter un appareil à réparer à travers un transfo d'isolement.
- Ne jamais remplacer les modules ni d'autres composants quand l'appareil est sous tension.
- Pour l'ajustage, utiliser des outils en plastique au lieu d'instruments métalliques. Ceci afin d'éviter les court-circuits et exclure l'instabilité dans certains circuits.

Observations

- La mésure des tensions continues et des oscillogrammes doit se faire par rapport à la terre de l'appareil.
  EXCEPTION
  Sur l'unité d'alimentation la tension continue et l'oscillogramme sont mesurés sur le côte primaire en Live GND.
- La mésure des tensions continues et des oscillogrammes figurant sur le schéma doit se faire dans un signal de barre couleur porteuse image sur 503.25 MHz (C25).
- Les oscillogrammes et tension sont mésurées en mode RECORD ou PLAY.
- Les semi-conducteurs indiqués dans le schéma de principe et à la liste des compostants, sont interchangeables par repère sur ce chassis avec les semi-conducteurs de l'appareil quelle que soit la désignation de type donnée sur ces semi-conducteurs.

Veiligheidsinstructies

- Veiligheidsbepalingen vereisen, dat het apparaat in zijn oorspronkelijke toestand wordt teruggebracht en dat onderdelen, indentiek aan de oorspronkelijke, worden toegepast.
  De veiligheidsonderdelen zijn aangeduid met het symbool

  ⚠
- Alle IC's en vele andere halfgeleiders zijn gevoelig voor elektrostatische ontladingen (ESD). Onzorgvuldig behandelen tijdens reparatie kan de levensduur drastisch doen verminderen. Zorg ervoor, dat U tijdens reparatie via een polsband met weerstand verbonden bent met hetzelfde potentiaal als de massa van het apparaat. Houd componenten en hulpmiddelen ook op ditzelfde potentiaal.
- Sluit een apparaat dat gerepareerd wordt altijd via een scheidingstransformator aan op de netspanning.
- Verwissel nooit modules of andere onderdelen terwijl het apparaat is ingeschakeld.
- Gebruik voor het afregelen plastic i.p.v metalen gereedschap. Dit om mogelijke kortsluiting te voorkomen of een bepaalde schakeling instabiel te maken.

Opmerkingen

- De gelijksspanningen en oscillogrammen dienen gemeten te worden ten opzichte van de apparaat aarde.
- De gelijksspanningen en oscillogrammen vermeld in de schema's dienen gemeten te worden met een kleurbalkensignaal beelddraaggolf op 503.25 MHz (C25).
- De oscillogrammen en gelijksspanningen zijn in RECORD of PLAY mode gemeten.
- De halfgeleiders, die in het pricipeschema en in de stuklijsten, zijn vermeld, zijn per positie volledig uitwisselbaar met de halfgeleiders in het apparaat, ongeacht de typeaanduiding op deze halfgeleiders.

Avvertimenti

- Le prescrizioni di sicurezza richiedono che l'apparecchio sia ricondotto alle condizioni originali e che siano usati ricambi originali.

  Componenti di sicurezza sono marcati con ⚠
- Tutti gli IC e semiconduttori sono sensibili a scariche elettrostatiche (ESD). Noncuranze durante la riparazione dei semiconduttori possono danneggiarli o condurre ad una riduzione drastica della durata. Durante la riparazione assicurarsi di essere collegati allo stesso potenziale attraverso un bracciale di protezione contro scariche elettrostatiche. Inoltre tenere anche tutti i componenti e gli attrezzi a questo potenziale.
- Apparecchi da riparare bisogna collegarli sempre via un trasformatore isolante (separatore) alla tensione normale.
- Non scambiare moduli o altri componenti quando l'apparecchio è in funzione.
- Per l'accordo usare soltanto attrezzi di plastica (non usare attrezzi metallici). Cosí si evitano cortocircuiti e collegamenti instabili.

Osservazioni

- Misurare le tensioni continue e gli oscillogrammi riferiendosi alla massa dell'apparecchio.
  ECCEZIONE
  Le tensioni continue e gli oscillogrammi dall'alimentatore sono misurati sulla parte primaria contro GND-Live.
- Le tensioni continue e gli oscillogrammi indicati negli schemi di collegamento devono essere misurati secondo le condizioni seguenti: segnale barre colore, portante dell'immagine su: 503.25 MHz (C25).
- Gli oscillogrammi e le tensioni continue sono misurati in RECORD o PLAYBACK.
- I componenti indicati nelle liste sono intercambiabili con quelli nell'apparecchio nonostante l'eventuale denominazione di modelli.

Avisos

- Las instrucciones de seguridad exigen que después de la reparación el aparato se encuentre en el estado original y que las piezas de repuesto, utilizadas para la reparación, sean idénticas a las originales.

  Los componentes de seguridad estan marcados con ⚠
- Todos los IC y semiconductores son sensibles a descargas electrostáticas (ESD). Un tratamiento no conforme a las instrucciones de semiconductores en caso de reparación, podría llevar a la destrucción de estos componentes, o a una reducción drástica de la duración. Tenga cuidado de que, en caso de reparación, estar al mismo potencial que la masa del aparato, por una pulsera con resistencia. Ponga todos los componentes, herramientas y recursos al mismo potencial.
- Para reparar un aparato hay que conectarlo siempre a la alimentación a traves de un transformador de aislamiento.
- Cuando un aparato está en marcha no pueden ser cambiados módulos u otras piezas de repuesto.
- Para los ajustes hay que utilizar exclusivamente herramientas de plástico (nunca herramientas metálicas). Así se evitaran cortocircuitos y circuitos inestables.

Notas

- Hay que medir las tensiones continuas y los oscilogramas contra la masa del aparato.
  UITZONDERING:
  Bij het netgedeelte zijn de gelijkspanningen en oscillogrammen aan de primaire kant tegen Live GND gemeten.
- Las tensiones continuas y los oscilogramas mencionados en los esquemas tienen que ser medidos de manera siguiente: señal barra de color portadora de imagen en 503.25MHz (C25)
- Los oscilogramas y las tensiones continuas son medidas en „RECORD“ y „PLAYBACK“
- Los componentes mencionados en las listas se los puede cambiar por los componentes en el aparato, a pesar de eventuales designaciones de tipos.

GB WARNING FOR LITHIUM BATTERIES!

Lithium batteries, if incorrectly used (excessive heat, wrong connection of terminals, short circuit represent a danger of explosion!
Lithium batteries must be replaced only by original spare parts.

D WARNHINWEIS ZU LITHIUM-BATTERIEN!

Bei fascher Handhabung (Überhitzung, Falschpolung oder Kurzschluß) der Lithium-Batterien besteht Explosionsgefahr!
Lithium-Batterien dürfen nur gegen Originalersatzteile getauscht werden.

F ATTENTION!

Pile au lithium.
Danger d'explosion si traitée incorrectement. Ne peut être remplacée que par un spécialiste (comme décrit dans les instructions de réparation).

NL OPGELET MET LITHIUM-BATTERIJEN!

Bij foutieve behandeling (oververhitting, foutieve poling of kortsluiting) van lithium-batterijen bestaat er explosiegevaar! Lithium-batterijen mogen slechts door originele onderelen vervangen worden.

I ATTENZIONE CON LE PILE AL LITIO!

In caso di utilizzo errato (surriscaldamento, errata posizione dei poli o cortocircuito) delle pile al litio consiste pericolo di esplosione! Le pile al litio si possone soltituire solo con pezzl di ricambio originali.

E AVISO!

Bateria de litio.
Por una inadecuada intervención puede explotar.
Solo debe ser cambiada por una persona con conocimientos técnicos (como en la guía de reparación se describe).

DK ADVARSEL!

Lithium batteri. Eksplosionsfare.
Udskiftning ma kun foretages af en sagkyndig, og som beskrevet in servicemanualen.

S VARNING!

Eksplosionsfara vid felaktigt batteribyte!
Använd samma batterityp eller ekvivalent typ som rekommenderas av apparattillverkaren.

SF VAROITUS!

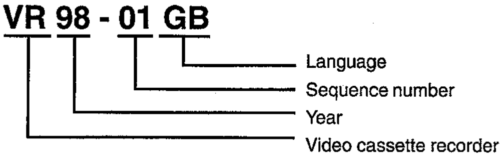
Paristo voi räjähtää, jos se on virheellisesti asennettu!
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin.

Modifications

Description of the system used for publishing modification data and supplements to the service manual.

All modification data and supplements to the Service Manual are published by means of Service Information bulletins.

Each Service information has a number, for example :


VR 98 - 01 GB
Language
Sequence number
Year
Video cassette recorder

A Service Information bulletin concists of a front sheet, as the case may be followed by supplementary and/or replacement sheets.

Replacement sheets serve to replace existing sheets in the Service Manual. These sheets are identified by an additional letter after the page number, for example 5-1a. Page 5-1a then takes the place of page 5-1.

Supplementary sheets are inserted between the existing sheets in the Service Manual. These sheets can be identified by an additional figure following the page number, for example 5-1-1.

Sheet 5-1-1 should be inserted after page 5-1.

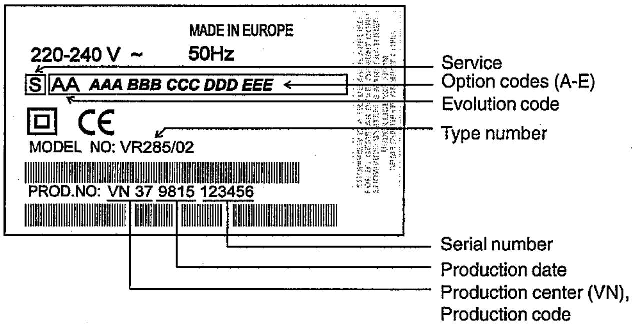
Description of the system by means of which modifications are indicated in the recorder.

All important parts of the recorder, such as tape deck, p.c. boards and modules, are provided with a sticker. These stickers specify a number of product data. The meaning of this data will now be explained for the most important sections.

The complete recorder

The type plate is located at the back of the recorder, below an example of such a type plate is given.

Type plate :

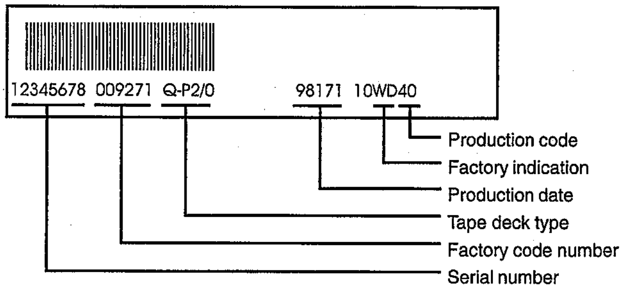

MADE IN EUROPE
220-240 V ~
50Hz
S
AA AAA BBB CCC DDD EEE
CE
MODEL NO: VR285/02
PROD.NO: VN 37 9815 123456
Service
Option codes (A-E)
Evolution code
Type number
Serial number
Production date
Production center (VN),
Production code

Note :

- In the case of an important modification to the recorder the production code on the type plate is increased by one.
  E.g. 37 becomes 38.

- In the case of an important modification to the service documentation the evolution code on the type plate is increased by one.
  E.g. AA becomes AB.

Tape deck


12345678 009271 Q-P2/0 98171 10WD40
Production code
Factory indication
Production date
Tape deck type
Factory code number
Serial number

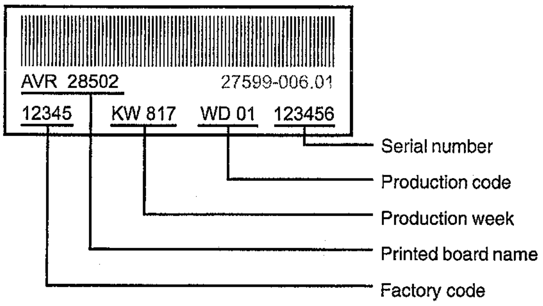
Note :

The production code and the serial number on the tape deck need not correspond to the production code and the serial number on the type plate.

Printed panels

The stickers are generally located on the track side of the module.

Example :


AVR 28502
27599-006.01
12345
KW 817
WD 01
123456
Serial number
Production code
Production week
Printed board name
Factory code

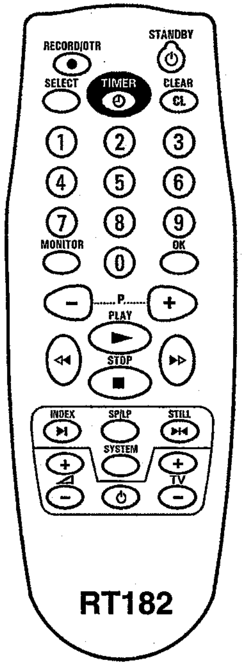
Remarks :

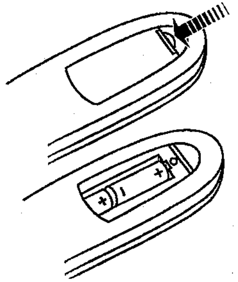
The production code number will not always be mentioned.

In case of an important modification, the last figure of the factory code number (point number) is increased by one. E.g. 6635.1 becomes 6635.2.

OPERATING INSTRUCTIONS IN BRIEF

The remote control


RECORD/OTR
STANDBY
SELECT
TIMER
CLEAR
CL
1
2
3
4
5
6
7
8
9
MONITOR
OK
0
P
PLAY
STOP
INDEX
SP/LP
STILL
SYSTEM
TV
RT182



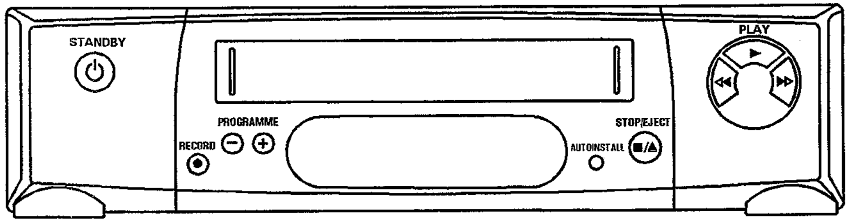
RECORD/OTR ●	Record
STANDBY ⏻	Standby
SELECT	Function selector
TIMER ⏻	'VIDEOPlus' / 'TIMER' programming
CLEAR (CL)	Reset, clear
0-9	Digit buttons 0-9
MONITOR	TV monitor function
OK	Confirm button
P –	Down, number minus
P +	Up, number plus
PLAY ▶	Playback
◁◀	Rewind/Reverse scanning
▶▷	Forward wind/ Forward scanning
STOP ■	Pause/Stop, Tuner-mode
INDEX ▶I	Index search
SP/LP	SP/LP selection
STILL ▶◀	Still picture
SYSTEM	Special function

Additional TV functions: Only function with televisions with the same remote control code.

◿+	TV volume plus
◿–	TV volume minus
⏻	Switch off TV
TV+	Programme number +
TV–	Programme number -

Front of the video recorder

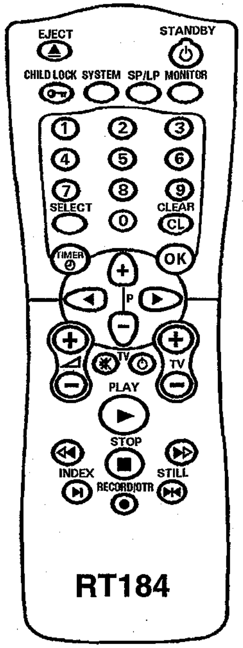
STANDBY ⏻	Standby
RECORD ●	Record
PROGRAMME –	Down/Minus, number
PROGRAMME +	Up/Plus, number
AUTOINSTALL	Installation
STOP/EJECT ■/▲	Stop/Cassette eject
◁◀	Rewind/Reverse scanning
PLAY ▶	Playback
▶▷	Forward wind/ Forward scanning

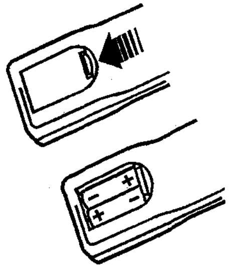

STANDBY
PROGRAMME
RECORD
AUTOINSTALL
STOP/EJECT
PLAY

VR285, VR485, VR685

OPERATING INSTRUCTIONS IN BRIEF

The remote control


EJECT
STANDBY
CHILD LOCK
SYSTEM
SP/LP
MONITOR
1
2
3
4
5
6
7
8
9
SELECT
0
CLEAR
CL
TIMER
OK
P
TV
PLAY
STOP
INDEX
RECORD/OTR
STILL
RT184



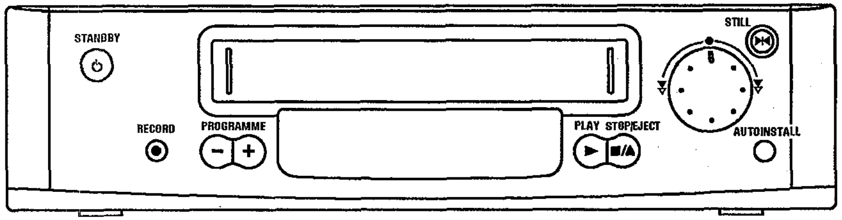
EJECT ▲	Eject
STANDBY ⏻	Standby
CHILD LOCK 🔑	Child lock
SYSTEM	Special function
SP/LP	SP/LP selection
MONITOR	TV monitor function
0-9	Digit buttons 0-9
SELECT	Function selector
CLEAR (CL)	Reset, clear
TIMER ⏲	'VIDEOPlus' / 'TIMER' programming
OK	Confirm button
P+	Up/Plus, programme number
◀	Menu left
▶	Menu right
P–	Down/Minus, programme number
PLAY ▶	Playback
◁◀	Rewind/Reverse scanning
STOP ■	Pause/Stop, Tuner-mode
▶▷	Forward wind/ Forward scanning
INDEX ▶I	Index search
RECORD/OTR ●	Record
STILL ▶◀	Still picture

Additional TV functions:

◿+	TV volume plus
◿–	TV volume minus
TV🔇	TV sound off
TV ⏻	Switch off TV
TV+	Programme number +
TV–	Programme number -

Front of the video recorder

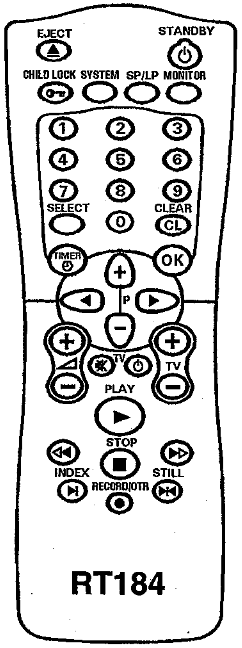
STANDBY ⏻	Standby
RECORD ●	Record
PROGRAMME –	Down/Minus, number
PROGRAMME +	Up/Plus, number
PLAY ▶	Playback
STOP/EJECT ■/▲	Stop/Cassette eject
SHUTTLE ON / STILL ▶◀	Still picture
-⊙+	Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
AUTOINSTALL	Installation button

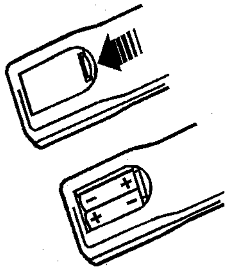

STANDBY
RECORD
PROGRAMME
PLAY
STOP/EJECT
STILL
AUTOINSTALL

VR287, VR487

OPERATING INSTRUCTIONS IN BRIEF

The remote control


EJECT
STANDBY
CHILD LOCK
SYSTEM
SP/LP
MONITOR
1
2
3
4
5
6
7
8
9
SELECT
CLEAR
0
CL
TIMER
OK
P
TV
PLAY
STOP
INDEX
STILL
RECORD/OTR
RT184



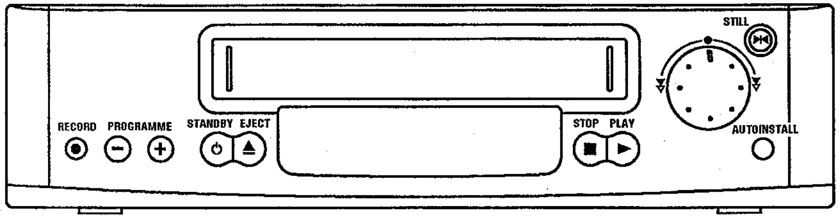
EJECT ▲	Eject
STANDBY ⏻	Standby
CHILD LOCK O‑‑	Child lock
SYSTEM	Special function
SP/LP	SP/LP selection
MONITOR	TV monitor function
0-9	Digit buttons 0-9
SELECT	Function selector
CLEAR (CL)	Reset, clear
TIMER ⏻	'VIDEOPlus' / 'TIMER' programming
OK	Confirm button
P +	Up/Plus, programme number
◀	Menu left
▶	Menu right
P –	Down/Minus, programme number
PLAY ▶	Playback
◁◀	Rewind/Reverse scanning
STOP ■	Pause/Stop, Tuner-mode
▶▷	Forward wind/ Forward scanning
INDEX ▶▎	Index search
RECORD/OTR ●	Record
STILL ▶◀	Still picture

Additional TV functions:

◿ +	TV volume plus
◿ –	TV volume minus
TV 🔇	TV sound off
TV ⏻	Switch off TV
TV +	Programme number +
TV –	Programme number -

Front of the video recorder

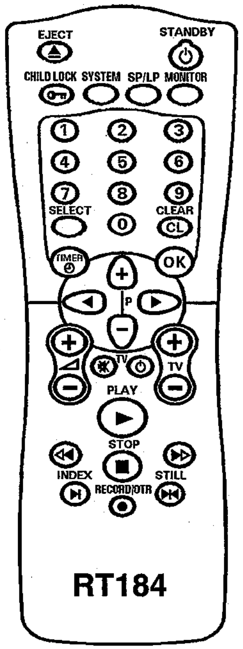
RECORD ●	Record
PROGRAMME –	Down/Minus, number
PROGRAMME +	Up/Plus, number
STANDBY ⏻	Standby
EJECT ▲	Cassette eject
STOP ■	Pause/Stop
PLAY ▶	Playback
STILL ▶◀	Still picture
-◎+	Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
AUTOINSTALL	Installation button

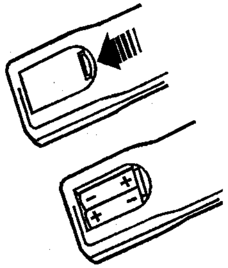

RECORD
PROGRAMME
STANDBY
EJECT
STOP
PLAY
STILL
AUTOINSTALL

VR686

OPERATING INSTRUCTIONS IN BRIEF

The remote control


EJECT
STANDBY
CHILD LOCK
SYSTEM
SP/LP
MONITOR
SELECT
CLEAR
CL
TIMER
OK
P
TV
PLAY
STOP
INDEX
STILL
RECORD/OTR
RT184



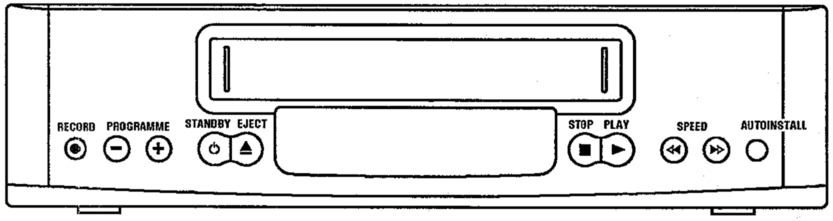
EJECT ▲	Eject
STANDBY ⏻	Standby
CHILD LOCK ⊶	Child lock
SYSTEM	Special function
SP/LP	SP/LP selection
MONITOR	TV monitor function
0-9	Digit buttons 0-9
SELECT	Function selector
CLEAR (CL)	Reset, clear
TIMER ⏲	'VIDEOPlus' / 'TIMER' programming
OK	Confirm button
P+	Up/Plus, programme number
◀	Menu left
▶	Menu right
P−	Down/Minus, programme number
PLAY ▶	Playback
◁◀	Rewind/Reverse scanning
STOP ■	Pause/Stop, Tuner-mode
▶▷	Forward wind/ Forward scanning
INDEX ▶❙	Index search
RECORD/OTR ●	Record
STILL ▶◀	Still picture

Additional TV functions:

◿+	TV volume plus
◿−	TV volume minus
TV 🔇	TV sound off
TV ⏻	Switch off TV
TV+	Programme number +
TV−	Programme number -

Front of the video recorder

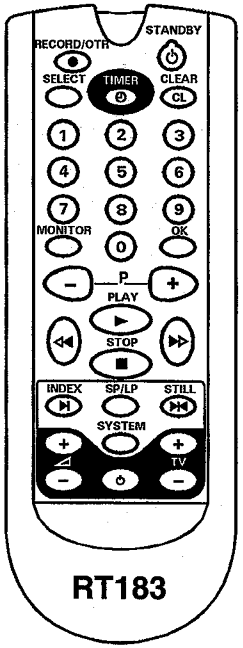
STANDBY ⏻	Standby
RECORD ●	Record
PROGRAMME−	Down/Minus, number
PROGRAMME+	Up/Plus, number
PLAY ▶	Playback
STOP ■	Stop/Cassette eject
SHUTTLE ON / STILL ▶◀	Still picture
-⊙+	Rotary control for Rewind/Reverse scanning or Forward wind/ Forward scanning
AUTOINSTALL	Installation button

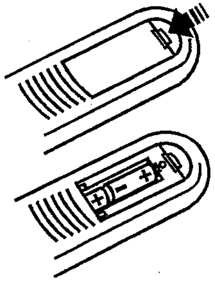

RECORD
PROGRAMME
STANDBY
EJECT
STOP
PLAY
SPEED
AUTOINSTALL

VR286

OPERATING INSTRUCTIONS IN BRIEF

The remote control


RECORD/OTR
STANDBY
SELECT
TIMER
CLEAR
CL
1
2
3
4
5
6
7
8
9
MONITOR
0
OK
P
PLAY
STOP
INDEX
SP/LP
STILL
SYSTEM
TV
RT183



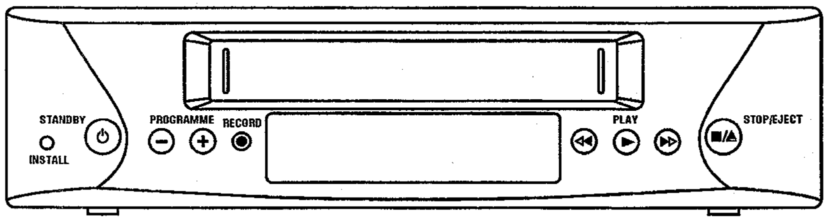
RECORD/OTR●	Record
STANDBY⏻	Standby
SELECT	Function selector
TIMER⏻	'VIDEOPlus' / 'TIMER' programming
CLEAR (CL)	Reset, clear
0-9	Digit buttons 0-9
MONITOR	TV monitor function
OK	Confirm button
P−	Down, number minus
P+	Up, number plus
PLAY▶	Playback
◁◀	Rewind/Reverse scanning
▶▷	Forward wind/ Forward scanning
STOP■	Pause/Stop, Tuner-mode
INDEX▶▎	Index search
SP/LP	SP/LP selection
STILL▶◀	Still picture
SYSTEM	Special function

Additional TV functions: Only function with televisions with the **same** remote control code.

◿+	TV volume plus
◿−	TV volume minus
⏻	Switch off TV
TV+	Programme number +
TV−	Programme number -

Front of the video recorder

INSTALL	Installation button
⏻	Standby
PROGRAMME−	Down/Minus, number
PROGRAMME+	Up/Plus, number
RECORD●	Record
◁◀	Rewind/Reverse scanning
PLAY▶	Playback
▶▷	Forward wind/ Forward scanning
■/▲ STOP/EJECT	Stop/Cassette eject


STANDBY
INSTALL
PROGRAMME
RECORD
PLAY
STOP/EJECT

SB110, SB115, SB615

List of abbreviations

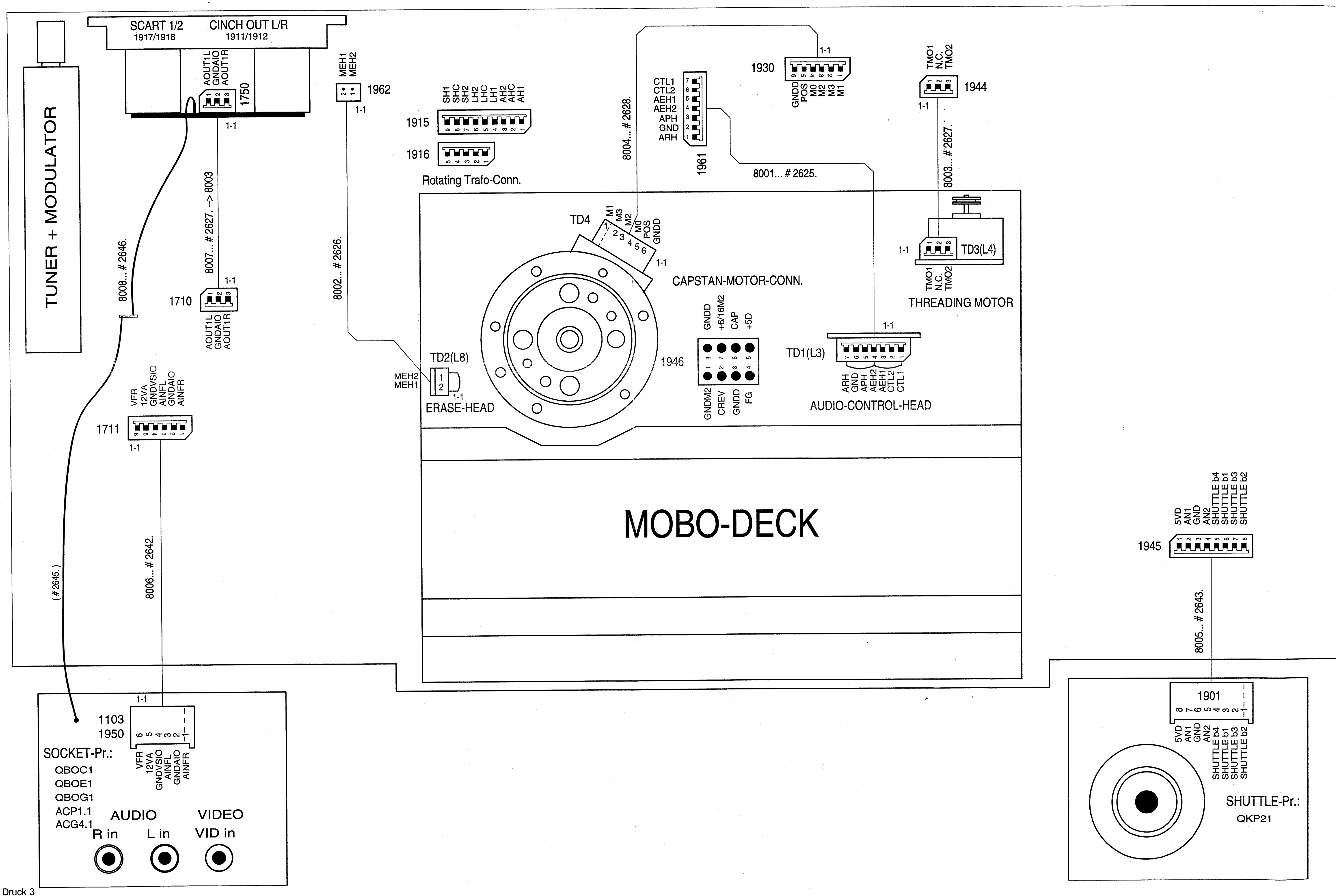
Signal	Description	Application											
+5AS	+5V analog after fuse 1700												QNIC
+5ASS	+5V digital, after coil 5706												QNIC
+5D	+5V digital			DE									QNIC
-28V	-28V display supply	PS			DC			IO					
-7V	-7V I/O-switches supply							IO					
12SW	+12V analog (< 6W switched)	PS					AL			FV			QNIC
12VA	+12V analog	PS						IO		FV	AF		
14VM1	+14V for threading- and headmotor	PS		DE									
2FSC	2x Colour subcarrier					VS						OS	
33V	+33V for tuner tuning voltage	PS								FV			
5VA	+5V analog	PS						IO		FV	AF	OS	
5VASW	+5V analog (< 6W switched)	PS	HA	DE		VS			SE	FV		OS	QNIC
5VASW2	+5V analog after coil 5802											OS	
5VASWB	+5V analog after coil 5726									FV			
5VD	+5V digital	PS		DE	DC					FV			
5VD1	+5V digital, after coil 5200				DC								
5VD2	+5V digital, after coil 5400			DE									
8SC1	Scart 1 pin 8 output			DE				IO					
8SC2	Scart 2 pin 8 input			DE				IO					
9/14VM2	Capstan motor supply, switched	PS		DE									
AEH1/2	Audio erase head						AL						
AF1	Audio from frontend, left						AL	IO		FV	AF		
AF2	Audio from frontend, right									FV	AF		
AFC	Automatic frequency control				DC					FV			
AFE	Audio from frontend									FV			QNIC
AGC	Automatic gain control			DE						FV			
AH1/2/C	Audio heads		HA										
AIN1	Audio input scart 1						AL	IO					
AIN1L	Audio input scart 1, left							IO			AF		
AIN1R	Audio input scart 1, right							IO			AF		
AIN2	Audio input scart 2						AL	IO					
AIN2L	Audio input scart 2, left							IO			AF		
AIN2R	Audio input scart 2, right							IO			AF		
AINFL	Audio left from Front connector							IO			AF		
AINFR	Audio right from front connector							IO			AF		
AMCO	Audio to the modulator									FV	AF		
AMLP	Audio mono playback						AL	IO		FV	AF		
AMLR	Audio mono record						AL	IO			AF		
AN1/2	Analog voltage from keyboard matrix				DC								
ANIL	NICAM Audio, left									FV			QNIC
ANIR	NICAM Audio, right									FV			QNIC
AOUT1L	Audio output from scart 1, left							IO			AF		
AOUT1R	Audio output from scart 1, right							IO			AF		
AOUT2L	Audio output from scart 2, left							IO			AF		
AOUT2R	Audio output from scart 2, right							IO			AF		
APH	Audio playback head						AL						
ARH	Audio record head						AL						
BLANKING	Blanking pulse RGB loopthrough							IO					
BLUE	Blue signal between scart 1/2							IO					
CAP	Capstan control voltage			DE									
CKDET	Colour system information			DE		VS							
CLKD1	Serial bus clock			DE	DC								
CREV	Capstan reverse			DE									
CROT	Colour rotation on/off			DE		VS							

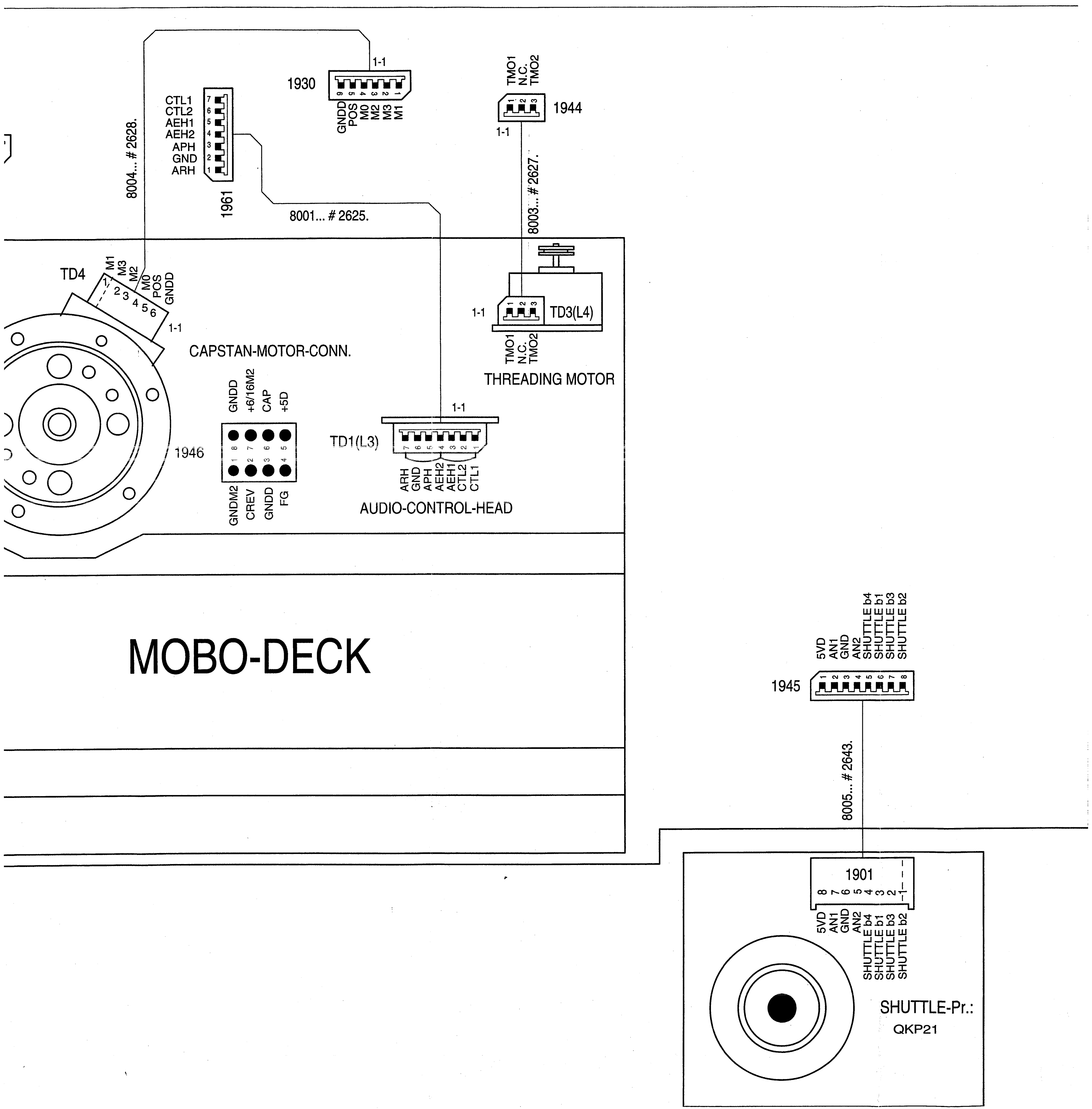
Signal	Description	Application											
CSCP	Colour phase switching for LP feature mode			DE		VS							
CSI	Colour system information			DE					SE				
CSP	Chrominance secam playback					VS			SE				
CSR	Chrominance secam record		HA						SE				
CSW	8V/14V switching for capstan motor	PS		DE									
CSYNC/1/2	Composite sync pulse		HA	DE		VS			SE			OS	
CTL1/2	Control track signal			DE			AL						
DATD1/2	Serial bus data			DE	DC								
DEC	Audio switching voltage							IO					
ENVC	Envelope comparator signal		HA	DE									
FFP	Feature frame pulse			DE		VS							
FG	Capstan tacho pulse			DE									
FGD	Capstan tacho pulse digital			DE									
FMAP	FM audio playback		HA								AF		
FMAR	FM audio record		HA								AF		
FMPV	FM video playback		HA			VS			SE				
FMRV	FM video record		HA			VS							
FOME	Follow Me (video signals equal)			DE								OS	
FTA	Threading tacho			DE									
FTAD	Threading tacho digital			DE									
GNDA	Ground analog							IO		FV			QNIC
GNDA1/A2	Ground analog QNIC												QNIC
GNDAF	Ground analog AF										AF		
GNDAIO	Ground analog IO							IO					
GNDAL	Ground analog AL						AL						
GNDD	Ground digital			DE				IO			AF		QNIC
GNDEO	Ground erase oscillator						AL						
GNDM	Ground capstan motor			DE									
GNDVS	Ground signal electronics										AF		
GNDVSIO	Ground analog VS, IO							IO					
GREEN	Green signal between scart1/2							IO					
HEHI	Heater for displaytube high	PS			DC								
HELO	Heater for displaytube low	PS			DC								
HEST	Heater voltage control signal				DC								
HP2	Head pulse audio		HA	DE							AF		
I/R	Deck switch / Record protection			DE									
ILED	LED-tower supply			DE									
INIT	Deck switch			DE									
IPOR	Inverse power on reset			DE	DC								
IRAF	Inverse record FM-audio		HA	DE									
IREV	Dubbing oscillator on/off			DE		VS	AL						
ISTBY	Inverse stand by	PS			DC								
ISWS	Video-FM mute			DE		VS							
IWIND	Control pulse amplification low			DE									
LH1/2/C	Long play heads		HA										
MEH1/2	Main erase head						AL						
MON	Monitor loop through scart 1/2							IO					
MOT0-3	Head motor Control lines			DE									
MTA	Audio mute			DE			AL						
NC	Not connected			DE									
OCLK	OSD-bus clock				DC							OS	
OCS	OSD chip select				DC							OS	
ODAT	OSD-bus data				DC							OS	
OFP	Frame pulse			DE								OS	

Signal	Description	Application											
PBV	Playback			DE					SE				
PG/FG	Head wheel position/-speed			DE									
POS	Position pulse headwheel			DE									
PSS	PAL or secam-L				DC					FV			
RECP	Record protection			DE									
RED	Red signal between scart 1/2							IO					
REEL	Head wheel control			DE									
SB1	Secam band 1				DC					FV			
SCL	IIC bus clock							IO		FV	AF	OS	QNIC
SCL2	Serial bus clock			DE		VS							
SDA	IIC bus data							IO		FV	AF	OS	QNIC
SDA2	Serial bus data			DE		VS							
SFS	Sound filter switch				DC					FV			
SH1/2/C	Standard play heads		HA										
SSIF	Second sound interfrequency									FV			QNIC
SWIN	Head switching pulse		HA	DE									
SYNC	Control track pulse			DE									
TAE	Tape end detection			DE									
TAS	Tape start detection			DE									
THIO	Threading motor in/out			DE									
TMO	Threading motor on/off			DE									
TMO1/2	Threading motor connection			DE									
TRIA/ALI	Tracking information audio / Audio level indication			DE							AF		
TRIV	Tracking information video		HA	DE									
VBS	Video input					VS		IO				OS	
VFR	Video from front connector							IO					
VFV	Video from frontend					VS		IO		FV		OS	
VIN1	Video input scart 1							IO					
VIN2	Video input scart 2							IO					
VISS	Control sync pulse inversion			DE									
VMOD	Video to the modulator							IO		FV			
VOUT	Video from OSD part							IO				OS	
VREC	Video record from I/O					VS			SE			OS	
VREF	Reference voltage								SE				
VSB	Video from signal electronics					VS						OS	
W/R	Control track write/read			DE									
WTL	Wind tacho left			DE									
WTLD	Wind tacho left digital			DE									
WTR	Wind tacho right			DE									
WTRD	Wind tacho right digital			DE									

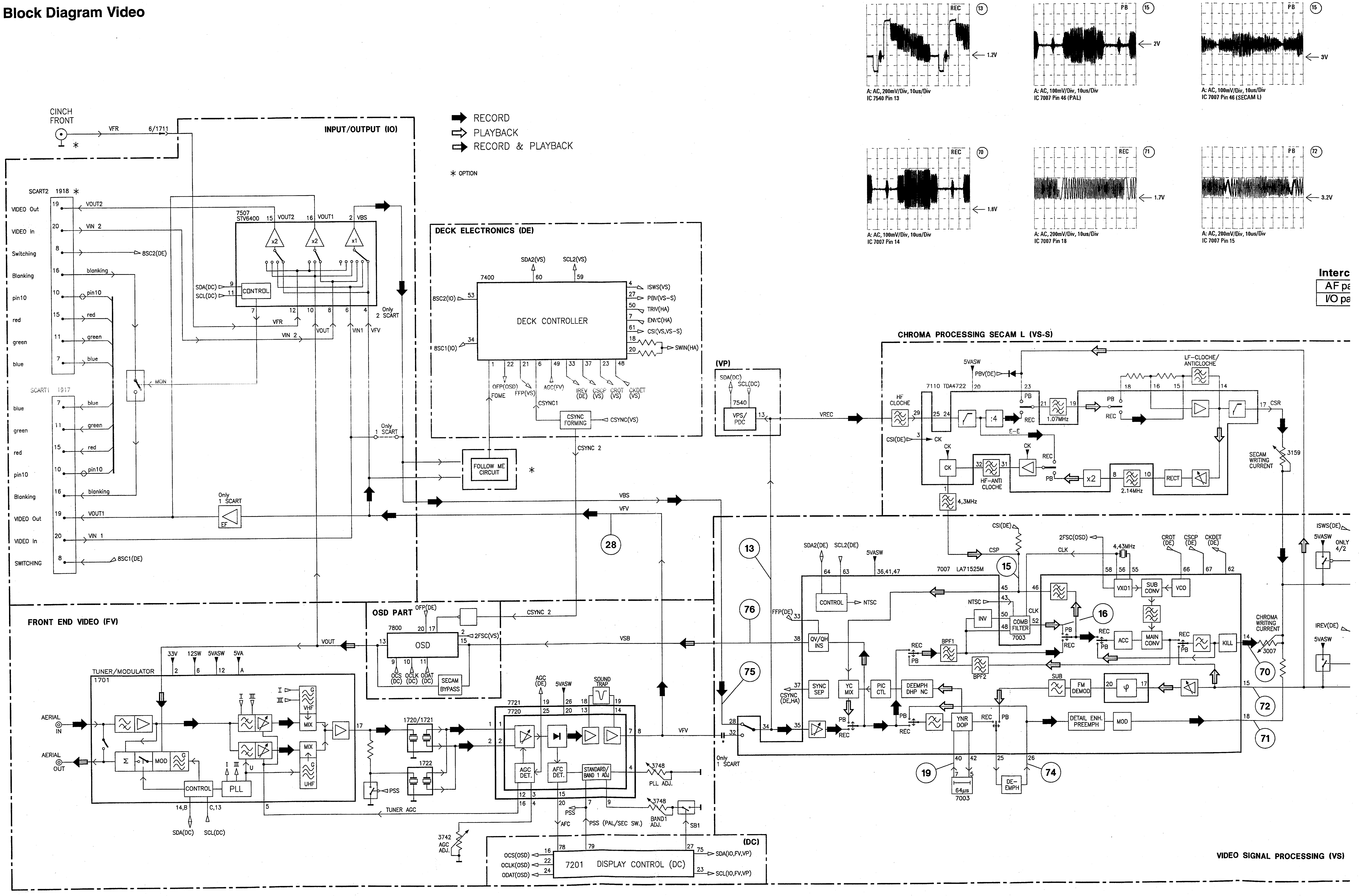
PS .... Power Supply .... page 3-8
HA .... Head Amplifier .... page 3-9
DE .... Deck Electronics .... page 3-10
DC .... Display Control .... page 3-11
VS .... Video Signal Processing .... page 3-12
AL .... Audio Linear .... page 3-12
IO .... In/Out .... page 3-13
SE .... Secam Processing .... page 3-14
FV .... Frontend .... page 3-15
AF .... Audio Processing .... page 3-16
OS .... On Screen Display .... page 3-17
QNIC ... Nicam Board .... page 3-18

Wiring Diagram


TUNER + MODULATOR
SCART 1/2
1917/1918
CINCH OUT L/R
1911/1912
AOUT1L
GNDAIO
AOUT1R
1750
1-1
8007... # 2627. --> 8003
1710
1-1
8008... # 2646.
(# 2645.)
MEH1
MEH2
1962
1-1
8002... # 2626.
SH1 SHC SH2 LH2 LHC LH1 AH2 AHC AH1
1915
1916
Rotating Trafo-Conn.
8004... # 2628.
CTL1 CTL2 AEH1 AEH2 APH GND ARH
1961
8001... # 2625.
1930
1-1
GNDD POS M0 M2 M3 M1
TMO1 N.C. TMO2
1944
1-1
8003... # 2627.
TD4
M1 M3 M2 M0 POS GNDD
1-1
CAPSTAN-MOTOR-CONN.
TD3(L4)
1-1
THREADING MOTOR
GNDD +6/16M2 CAP +5D
1946
GNDM2 CREV GNDD FG
TD1(L3)
1-1
ARH GND APH AEH2 AEH1 CTL2 CTL1
AUDIO-CONTROL-HEAD
TD2(L8)
MEH2
MEH1
1-1
ERASE-HEAD
VFR 12VA GNDVSIO AINFL GNDAIO AINFR
1711
1-1
8006... # 2642.
MOBO-DECK
5VD AN1 GND AN2 SHUTTLE b4 SHUTTLE b1 SHUTTLE b3 SHUTTLE b2
1945
8005... # 2643.
1-1
1103
1950
SOCKET-Pr.:
QBOC1
QBOE1
QBOG1
ACP1.1
ACG4.1
AUDIO
R in
L in
VIDEO
VID in
1901
SHUTTLE-Pr.:
QKP21


1930
1-1
GNDD
POS
M0
M2
M3
M1
CTL1
CTL2
AEH1
AEH2
APH
GND
ARH
1961
8004... # 2628.
8001... # 2625.
TMO1
N.C.
TMO2
1944
1-1
8003... # 2627.
TD4
M1
M3
M2
M0
POS
GNDD
1-1
CAPSTAN-MOTOR-CONN.
1-1
TD3(L4)
TMO1
N.C.
TMO2
THREADING MOTOR
GNDD
+6/16M2
CAP
+5D
1946
GNDM2
CREV
GNDD
FG
1-1
TD1(L3)
ARH
GND
APH
AEH2
AEH1
CTL2
CTL1
AUDIO-CONTROL-HEAD
MOBO-DECK
5VD
AN1
GND
AN2
SHUTTLE b4
SHUTTLE b1
SHUTTLE b3
SHUTTLE b2
1945
8005... # 2643.
1901
5VD
AN1
GND
AN2
SHUTTLE b4
SHUTTLE b1
SHUTTLE b3
SHUTTLE b2
SHUTTLE-Pr.:
QKP21

Block Diagram Video


A: AC, 200mV/Div, 10us/Div IC 7540 Pin 13

A: AC, 100mV/Div, 10us/Div IC 7007 Pin 46 (PAL)

A: AC, 100mV/Div, 10us/Div IC 7007 Pin 46 (SECAM L)

A: AC, 100mV/Div, 10us/Div IC 7007 Pin 14

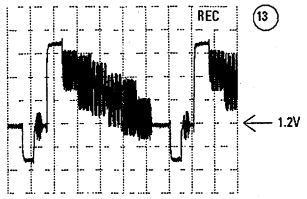
A: AC, 200mV/Div, 10us/Div IC 7007 Pin 18

A: AC, 200mV/Div, 10us/Div IC 7007 Pin 15

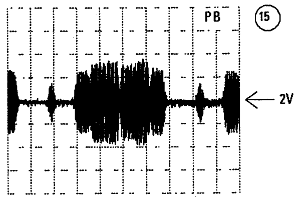
➡ RECORD
⇨ PLAYBACK
➡ RECORD & PLAYBACK

* OPTION

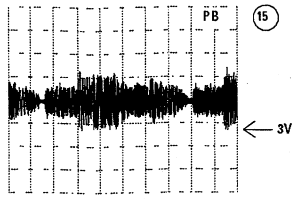
REC
PB
⑬
⑮
⑰⓪
⑰①
⑰②
1.2V
2V
3V
1.8V
1.7V
3.2V
Interc
AF pa
I/O pa
CINCH FRONT
VFR
6/1711
INPUT/OUTPUT (IO)
SCART2 1918
VIDEO Out
VIDEO In
Switching
Blanking
pin10
red
green
blue
VOUT2
VIN 2
8SC2(DE)
blanking
MON
SCART1 1917
VOUT1
VIN 1
8SC1(DE)
SWITCHING
7507 STV6400
VOUT1
VBS
CONTROL
SDA(DC)
SCL(DC)
VFR
VOUT
VIN1
VFV
Only 2 SCART
Only 1 SCART
EF
VBS
VFV
28
DECK ELECTRONICS (DE)
SDA2(VS)
SCL2(VS)
7400
DECK CONTROLLER
8SC2(IO)
8SC1(IO)
ISWS(VS)
PBV(VS-S)
TRIV(HA)
ENVC(HA)
CSI(VS,VS-S)
SWIN(HA)
OFP(OSD)
FOME
FFP(VS)
AGC(FV)
CSYNC1
IREV (DE)
CSCP (VS)
CROT (VS)
CKDET (VS)
CSYNC FORMING
CSYNC(VS)
CSYNC 2
FOLLOW ME CIRCUIT
(VP)
SDA(DC)
SCL(DC)
7540
VPS/PDC
VREC
CHROMA PROCESSING SECAM L (VS-S)
5VASW
PBV(DE)
7110 TDA4722
HF CLOCHE
CSI(DE)
CK
:4
1.07MHz
E-E
LF-CLOCHE/ ANTICLOCHE
CSR
SECAM WRITING CURRENT
3159
HF-ANTI CLOCHE
x2
2.14MHz
RECT
4,3MHz
FRONT END VIDEO (FV)
OSD PART
OFP(DE)
7800
OSD
2FSC(VS)
OCS (DC)
OCLK (DC)
ODAT (DC)
SECAM BYPASS
CSYNC 2
VOUT
VSB
33V
12SW
5VASW
5VA
TUNER/MODULATOR
1701
AERIAL IN
AERIAL OUT
VHF
MIX
UHF
MOD
CONTROL
PLL
SDA(DC)
SCL(DC)
TUNER AGC
1720/1721
1722
PSS
7721
7720
AGC (DE)
SOUND TRAP
AGC DET.
AFC DET.
STANDARD/ BAND 1 ADJ
3748
PLL ADJ.
BAND1 ADJ.
SB1
AFC
PSS (PAL/SEC SW.)
3742
AGC ADJ.
VFV
Only 1 SCART
(DC)
7201 DISPLAY CONTROL (DC)
OCS(OSD)
OCLK(OSD)
ODAT(OSD)
SDA(IO,FV,VP)
SCL(IO,FV,VP)
13
76
75
FFP(DE)
SDA2(DE)
SCL2(DE)
5VASW
7007 LA71525M
CONTROL
NTSC
QV/QH INS
SYNC SEP
CSYNC (DE,HA)
YC MIX
PIC CTL
DEEMPH DHP NC
YNR DOP
DETAIL ENH. PREEMPH
MOD
DE-EMPH
64μs
7003
19
74
2FSC(OSD)
CLK
4,43MHz
CSP
VXO1
SUB CONV
VCO
CROT (DE)
CSCP (DE)
CKDET (DE)
INV
COMB FILTER
7003
16
BPF1
BPF2
ACC
MAIN CONV
KILL
SUB
FM DEMOD
φ
CHROMA WRITING CURRENT
3007
70
72
71
15
ISWS(DE)
ONLY 4/2
IREV(DE)
VIDEO SIGNAL PROCESSING (VS)



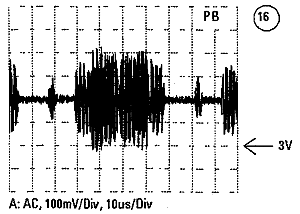
A: AC, 200mV/Div, 10us/Div
IC 7540 Pin 13



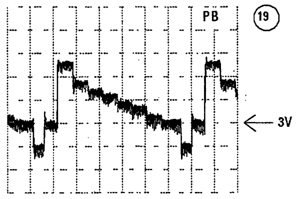
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (PAL)



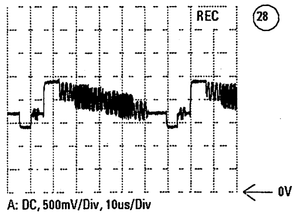
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (SECAM L)



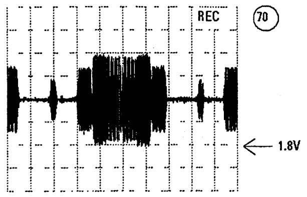
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 52



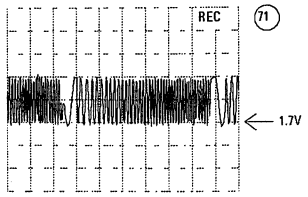
A: AC, 500mV/Div, 10us/Div
IC 7007 Pin 40



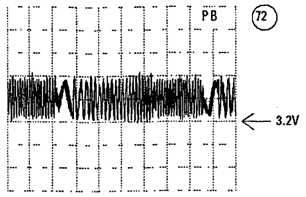
A: DC, 500mV/Div, 10us/Div
T 7730 Emitter



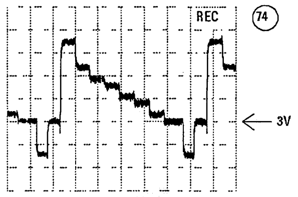
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 14



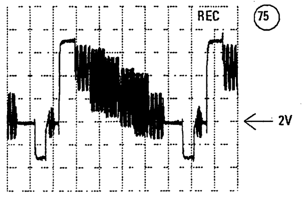
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 18



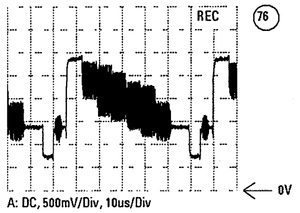
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 15



A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 26



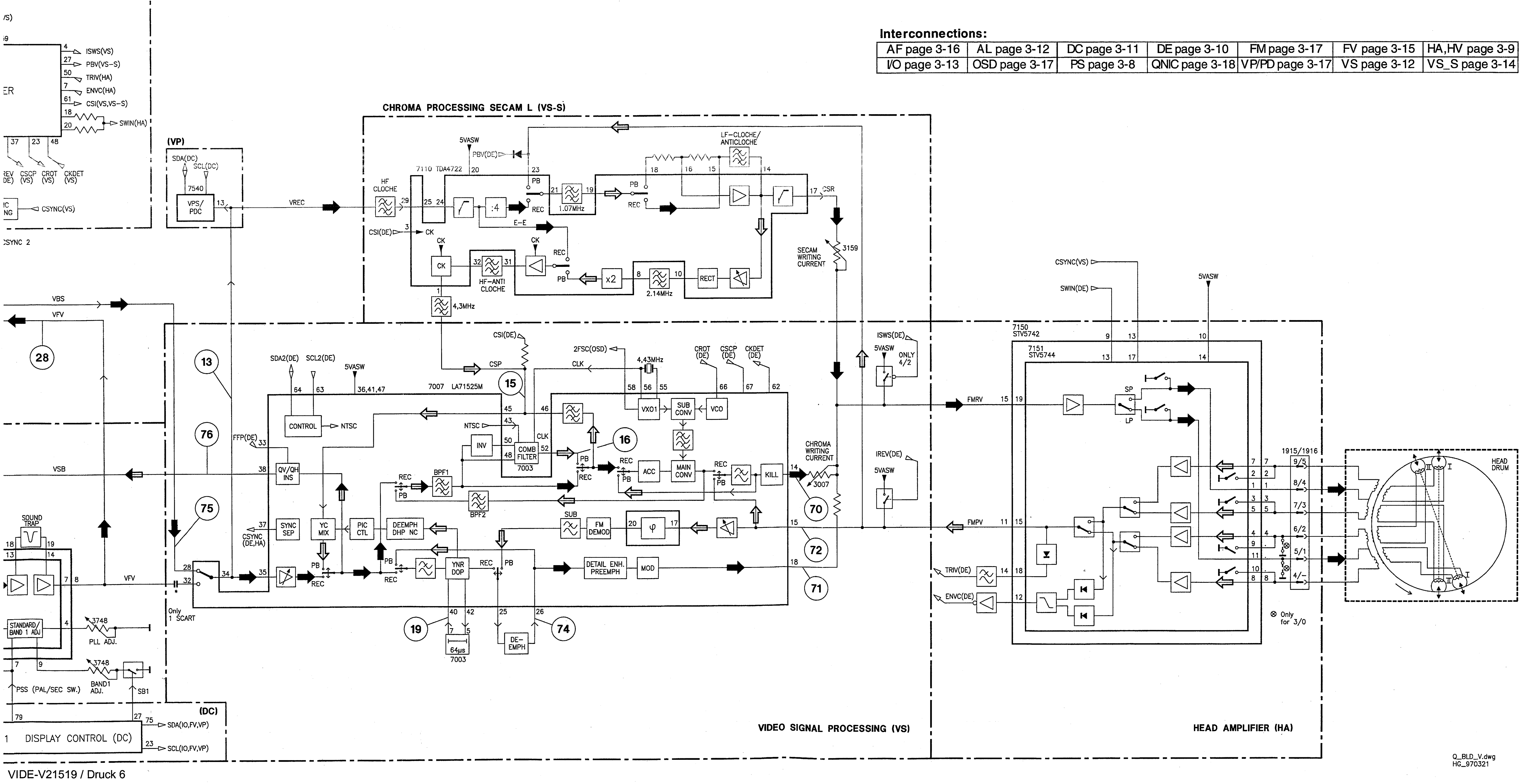
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 28



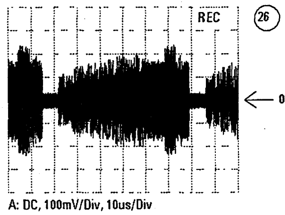
A: DC, 500mV/Div, 10us/Div
IC 7007 Pin 38

Interconnections:

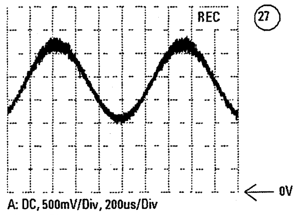
AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14


/S)
ISWS(VS)
PBV(VS-S)
TRIV(HA)
ENVC(HA)
CSI(VS,VS-S)
SWIN(HA)
ER
REV CSCP CROT CKDET (VS) (VS) (VS)
CSYNC(VS)
CSYNC 2
(VP)
SDA(DC)
SCL(DC)
7540
VPS/PDC
13
VREC
CHROMA PROCESSING SECAM L (VS-S)
5VASW
PBV(DE)
7110 TDA4722
HF CLOCHE
LF-CLOCHE/ANTICLOCHE
CSI(DE)
CK
:4
E-E
REC
PB
1.07MHz
CSR
x2
2.14MHz
RECT
HF-ANTI CLOCHE
4,3MHz
SECAM WRITING CURRENT
3159
VBS
VFV
28
13
76
75
SDA2(DE)
SCL2(DE)
5VASW
36,41,47
7007 LA71525M
CSI(DE)
CSP
2FSC(OSD)
CLK
4,43MHz
CROT (DE)
CSCP (DE)
CKDET (DE)
CONTROL
NTSC
FFP(DE)
INV
COMB FILTER
7003
VXO1
SUB CONV
VCO
MAIN CONV
ACC
KILL
QV/QH INS
VSB
BPF1
BPF2
SYNC SEP
YC MIX
PIC CTL
DEEPHM DHP NC
SUB
FM DEMOD
CSYNC (DE,HA)
YNR DOP
DETAIL ENH. PREEMPH
MOD
DE-EMPH
64μs
7003
15
16
19
74
70
72
71
CHROMA WRITING CURRENT
3007
SOUND TRAP
VFV
Only 1 SCART
STANDARD/BAND 1 ADJ
3748
PLL ADJ.
BAND1 ADJ.
SB1
PSS (PAL/SEC SW.)
(DC)
DISPLAY CONTROL (DC)
SDA(IO,FV,VP)
SCL(IO,FV,VP)
VIDEO SIGNAL PROCESSING (VS)
ISWS(DE)
5VASW
ONLY 4/2
IREV(DE)
CSYNC(VS)
SWIN(DE)
5VASW
7150 STV5742
7151 STV5744
FMRV
FMPV
SP
LP
TRIV(DE)
ENVC(DE)
1915/1916
HEAD DRUM
Only for 3/0
HEAD AMPLIFIER (HA)

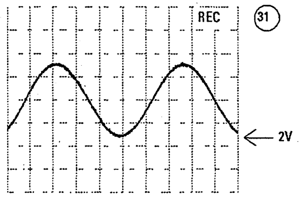
Block Diagram Audio Mono



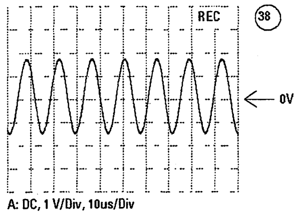
A: DC, 100mV/Div, 10us/Div
Tuner Pin 17



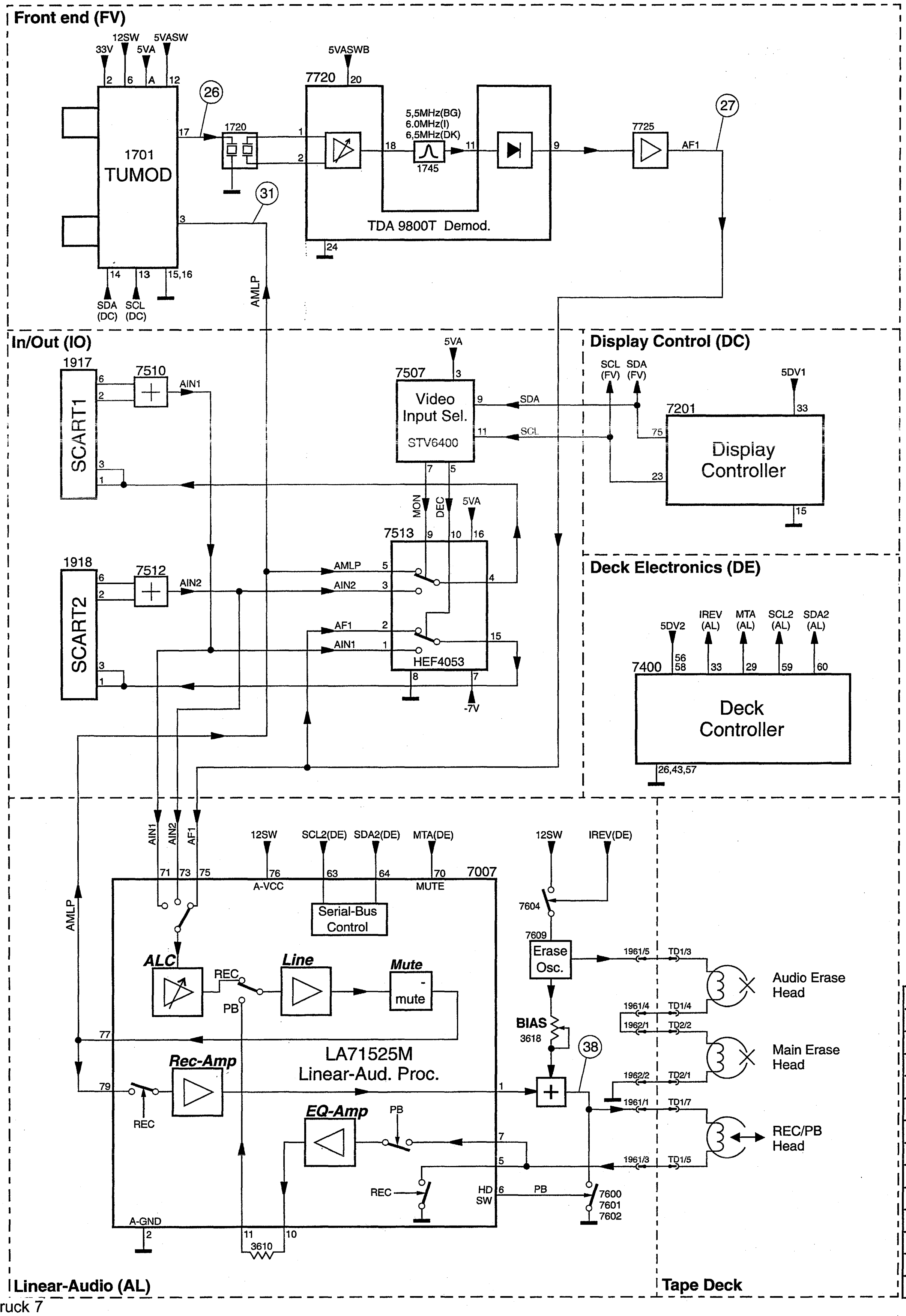
A: DC, 500mV/Div, 200us/Div
IC 7721 Pin 10



A: AC, 500mV/Div, 200us/Div
Modulator Pin 3



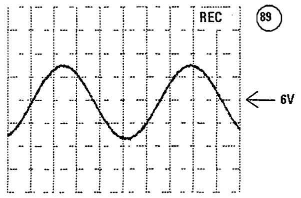
A: DC, 1 V/Div, 10us/Div
Connector 1951 Pin 1


Front end (FV)
33V
12SW
5VA
5VASW
1701
TUMOD
SDA (DC)
SCL (DC)
1720
26
31
5VASWB
7720
5,5MHz(BG)
6,0MHz(I)
6,5MHz(DK)
1745
TDA 9800T Demod.
27
7725
AF1
AMLP
In/Out (IO)
1917
7510
AIN1
SCART1
1918
7512
AIN2
SCART2
5VA
7507
Video Input Sel.
STV6400
SDA
SCL
MON
DEC
5VA
7513
AMLP
AIN2
AF1
AIN1
HEF4053
-7V
Display Control (DC)
SCL (FV)
SDA (FV)
5DV1
7201
Display Controller
Deck Electronics (DE)
5DV2
IREV (AL)
MTA (AL)
SCL2 (AL)
SDA2 (AL)
7400
Deck Controller
AIN1
AIN2
AF1
AMLP
12SW
SCL2(DE)
SDA2(DE)
MTA(DE)
A-VCC
MUTE
7007
Serial-Bus Control
ALC
REC
PB
Line
Mute
mute
LA71525M
Linear-Aud. Proc.
Rec-Amp
EQ-Amp
PB
REC
HD SW
PB
A-GND
3610
12SW
IREV(DE)
7604
7609
Erase Osc.
BIAS
3618
38
1961/5
TD1/3
Audio Erase Head
1961/4
TD1/4
1962/1
TD2/2
Main Erase Head
1962/2
TD2/1
1961/1
TD1/7
REC/PB Head
1961/3
TD1/5
7600
7601
7602
Linear-Audio (AL)
Tape Deck

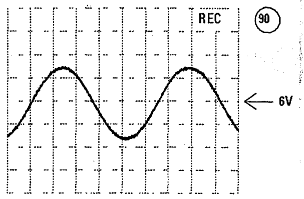
Interconnections:

AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

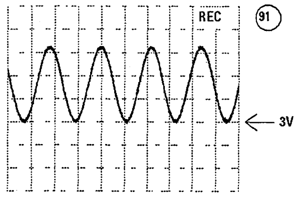
Block Diagram Audio Stereo



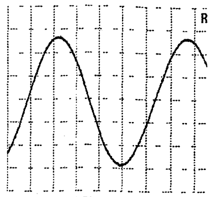
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 15, 16



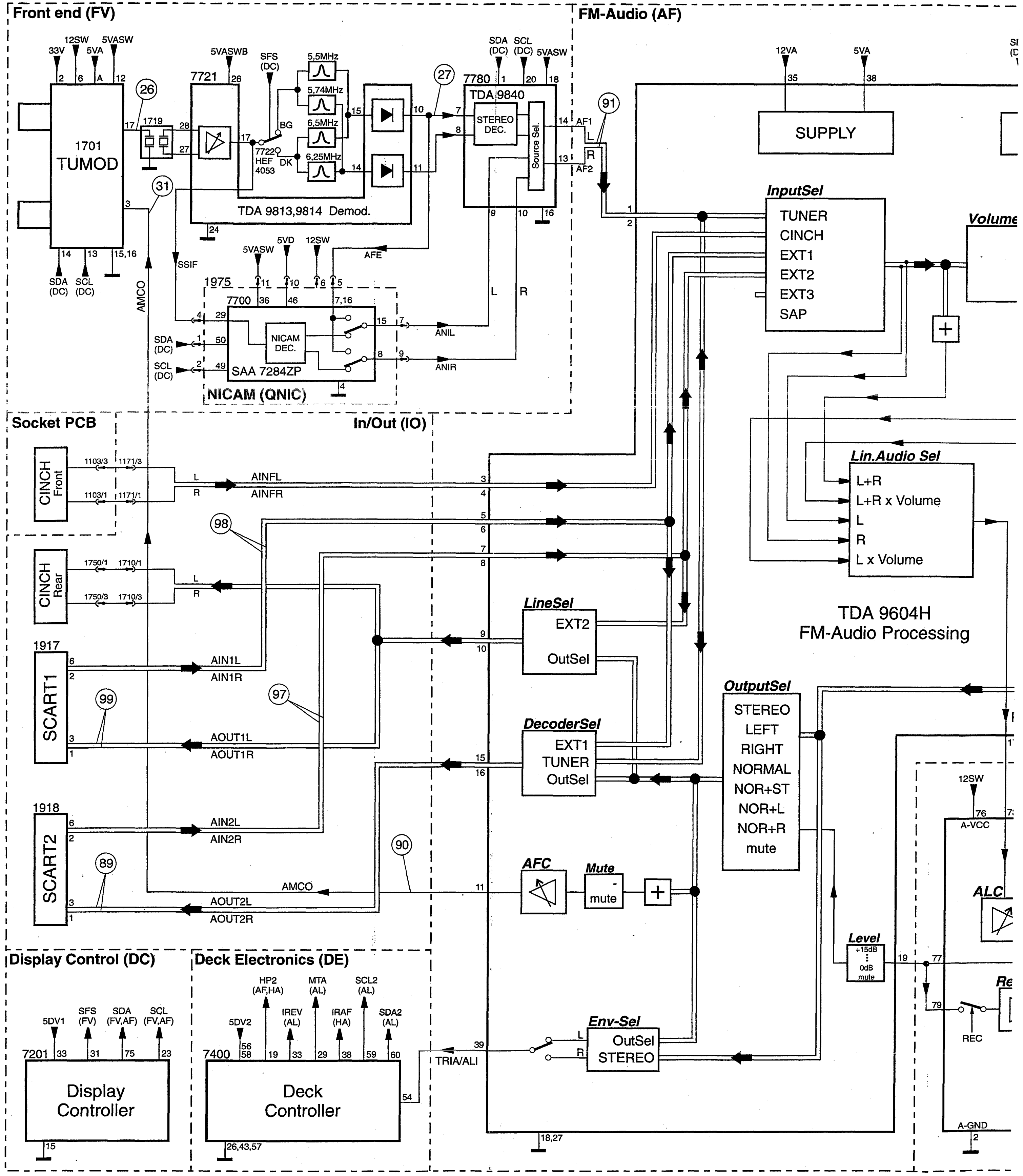
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 11



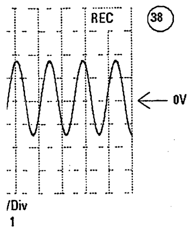
A: AC, 500mV/Div, 500us/Div
IC 7850 Pin 1, 2

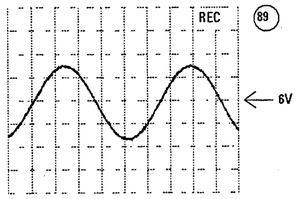


A: AC, 200mV/Div, 200us/Div
IC7850 Pin 7, 8

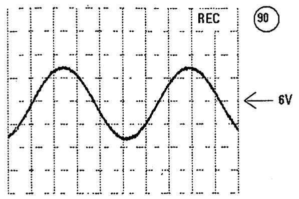

Front end (FV)
33V
12SW
5VA
5VASW
1701
TUMOD
SDA (DC)
SCL (DC)
1719
26
31
5VASWB
7721
SFS (DC)
5,5MHz
5,74MHz
6,5MHz
6,25MHz
BG
DK
7722 HEF 4053
TDA 9813,9814 Demod.
27
SDA (DC)
SCL (DC)
5VASW
7780
TDA 9840
STEREO DEC.
Source Sel.
AF1
AF2
91
AFE
SSIF
AMCO
5VASW
5VD
12SW
1975
7700
NICAM DEC.
SAA 7284ZP
NICAM (QNIC)
ANIL
ANIR
L
R
FM-Audio (AF)
12VA
5VA
SUPPLY
InputSel
TUNER
CINCH
EXT1
EXT2
EXT3
SAP
Volume
Lin.Audio Sel
L+R
L+R x Volume
L
R
L x Volume
TDA 9604H
FM-Audio Processing
Socket PCB
In/Out (IO)
CINCH Front
1103/3
1171/3
1103/1
1171/1
AINFL
AINFR
98
CINCH Rear
1750/1
1710/1
1750/3
1710/3
LineSel
EXT2
OutSel
1917
SCART1
AIN1L
AIN1R
99
97
AOUT1L
AOUT1R
DecoderSel
EXT1
TUNER
OutSel
OutputSel
STEREO
LEFT
RIGHT
NORMAL
NOR+ST
NOR+L
NOR+R
mute
1918
SCART2
AIN2L
AIN2R
89
90
AMCO
AOUT2L
AOUT2R
AFC
Mute
mute
Level
+15dB
0dB
mute
12SW
A-VCC
ALC
Rec
REC
Env-Sel
OutSel
STEREO
TRIA/ALI
Display Control (DC)
5DV1
SFS (FV)
SDA (FV,AF)
SCL (FV,AF)
7201
Display Controller
Deck Electronics (DE)
HP2 (AF,HA)
MTA (AL)
SCL2 (AL)
5DV2
IREV (AL)
IRAF (HA)
SDA2 (AL)
7400
Deck Controller
A-GND

Block Diagram Audio Stereo

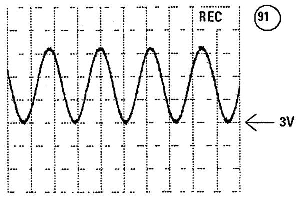




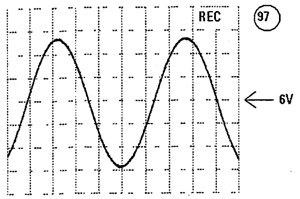
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 15, 16



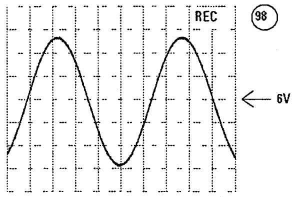
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 11



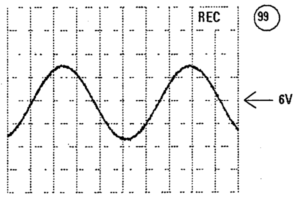
A: AC, 500mV/Div, 500us/Div
IC 7850 Pin 1, 2



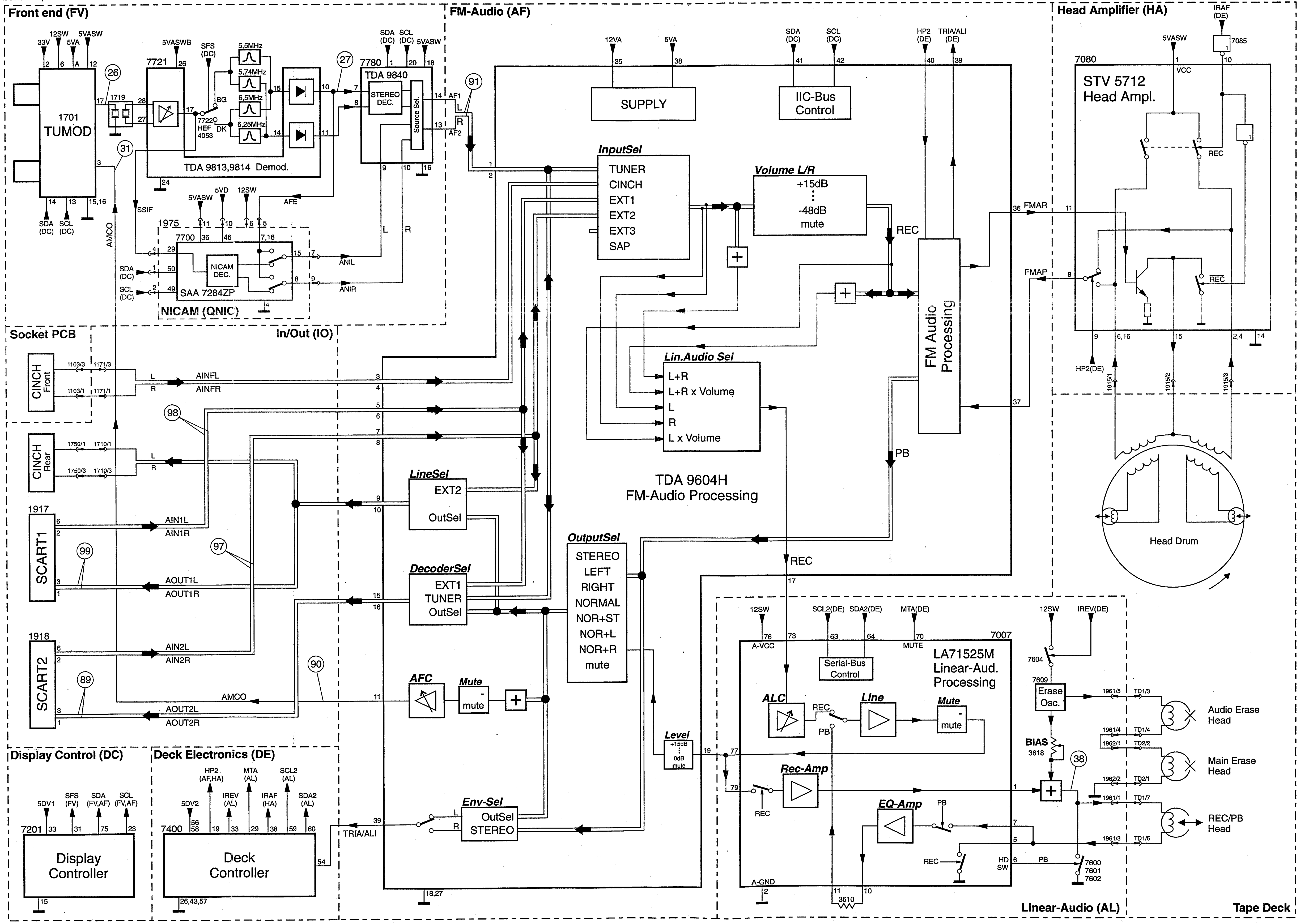
A: AC, 200mV/Div, 200us/Div
IC7850 Pin 7, 8



A: AC, 200mV/Div, 200us/Div
IC7850 Pin 5, 6



A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 9, 10


Front end (FV)
FM-Audio (AF)
Head Amplifier (HA)
1701
TUMOD
12SW
5VASW
33V
5VA
7721
5VASWB
SFS (DC)
5,5MHz
5,74MHz
6,5MHz
6,25MHz
BG
DK
7722
HEF 4053
TDA 9813,9814 Demod.
7780
TDA 9840
STEREO DEC.
Source Sel.
SDA (DC)
SCL (DC)
AF1
AF2
AFE
SSIF
AMCO
1975
7700
NICAM DEC.
SAA 7284ZP
NICAM (QNIC)
ANIL
ANIR
5VD
Socket PCB
In/Out (IO)
CINCH Front
CINCH Rear
AINFL
AINFR
1917
SCART1
AIN1L
AIN1R
AOUT1L
AOUT1R
1918
SCART2
AIN2L
AIN2R
AOUT2L
AOUT2R
12VA
SUPPLY
IIC-Bus Control
HP2 (DE)
TRIA/ALI (DE)
InputSel
TUNER
CINCH
EXT1
EXT2
EXT3
SAP
Volume L/R
+15dB
-48dB
mute
REC
PB
FM Audio Processing
Lin.Audio Sel
L+R
L+R x Volume
L
R
L x Volume
TDA 9604H
FM-Audio Processing
LineSel
EXT2
OutSel
DecoderSel
EXT1
TUNER
OutSel
OutputSel
STEREO
LEFT
RIGHT
NORMAL
NOR+ST
NOR+L
NOR+R
mute
AFC
Mute
mute
Env-Sel
OutSel
STEREO
TRIA/ALI
Level
+15dB
0dB
mute
FMAR
FMAP
IRAF (DE)
7085
7080
STV 5712
Head Ampl.
VCC
HP2(DE)
1915/1
1915/2
1915/3
Head Drum
Display Control (DC)
Deck Electronics (DE)
7201
5DV1
Display Controller
7400
5DV2
MTA (AL)
SCL2 (AL)
IREV (AL)
IRAF (HA)
SDA2 (AL)
HP2 (AF,HA)
Deck Controller
12SW
SCL2(DE)
SDA2(DE)
MTA(DE)
7007
A-VCC
Serial-Bus Control
MUTE
LA71525M
Linear-Aud. Processing
ALC
Line
Mute
Rec-Amp
EQ-Amp
A-GND
3610
HD SW
7600
7601
7602
IREV(DE)
7604
7609
Erase Osc.
BIAS
3618
Audio Erase Head
Main Erase Head
REC/PB Head
Linear-Audio (AL)
Tape Deck

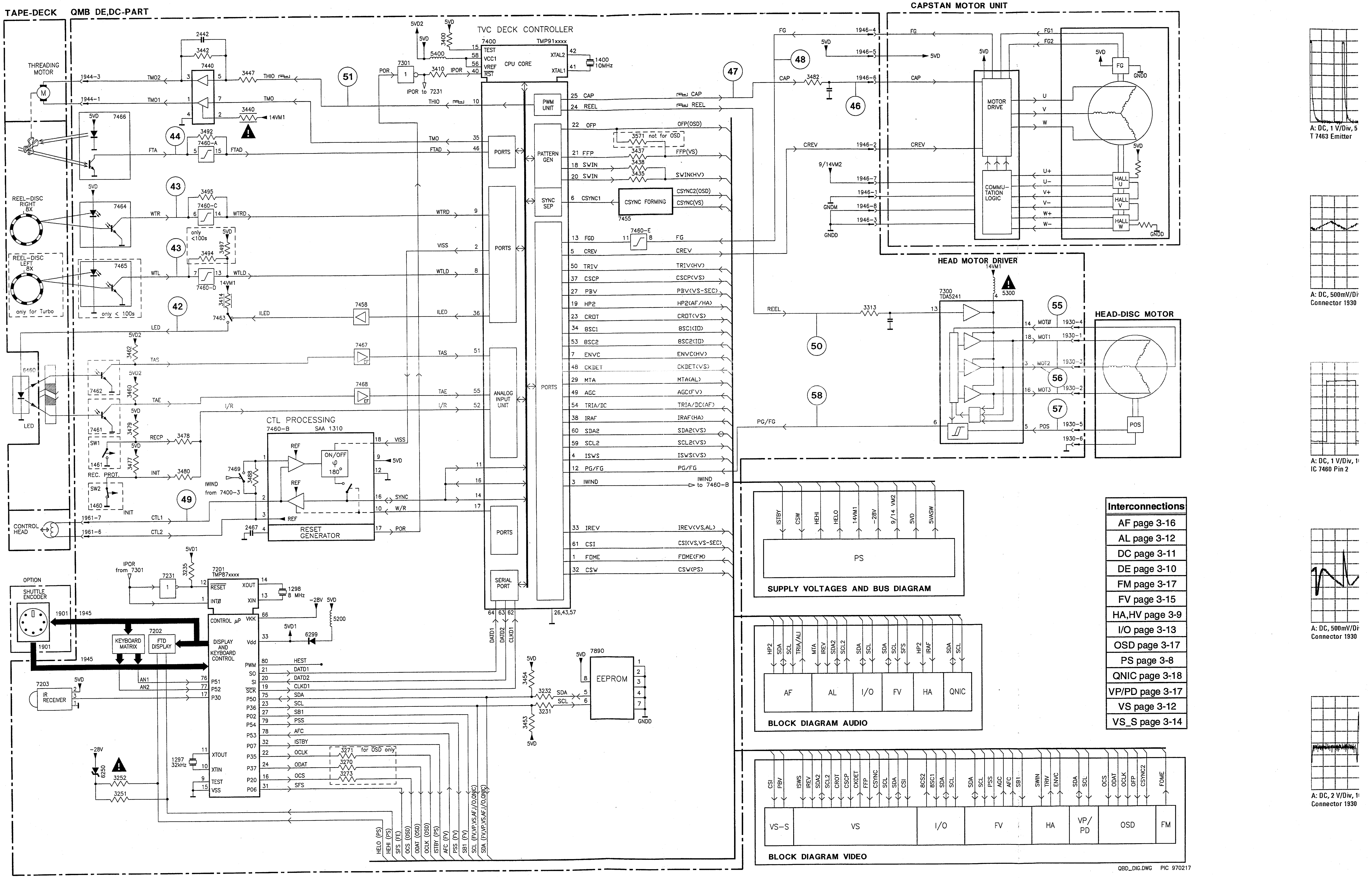
Interconnections:

AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

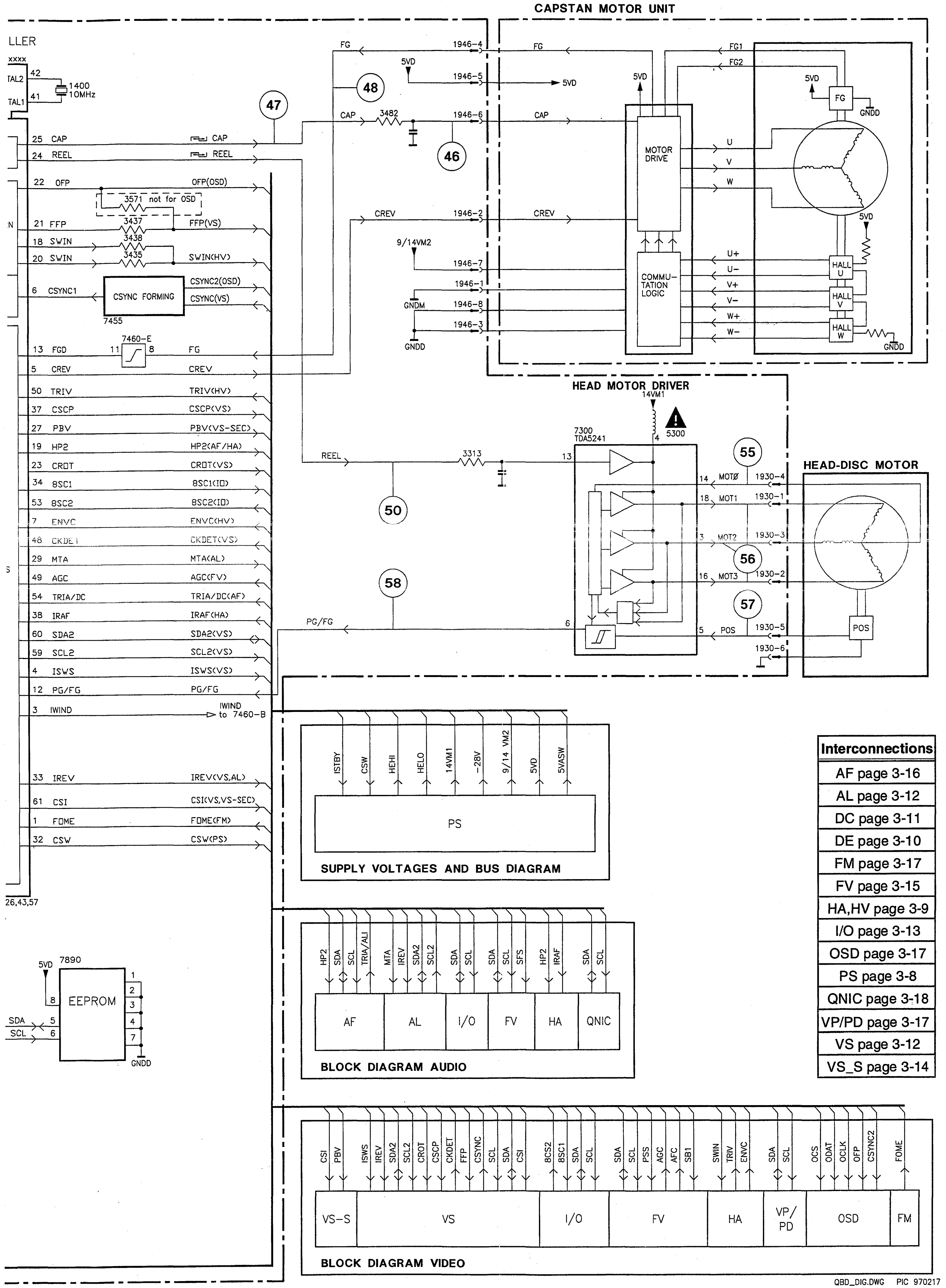
Interconnections:

AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14

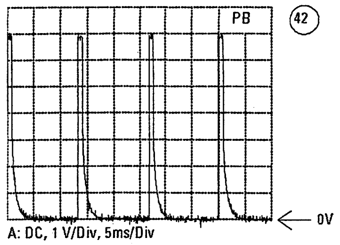
Block Diagram Digital


TAPE-DECK
QMB DE,DC-PART
THREADING MOTOR
REEL-DISC RIGHT 8X
REEL-DISC LEFT 8X
only for Turbo
CONTROL HEAD
LED
SW1
SW2
REC. PROT.
INIT
TVC DECK CONTROLLER
7400
TMP91xxxx
CPU CORE
PWM UNIT
PATTERN GEN
SYNC SEP
PORTS
ANALOG INPUT UNIT
SERIAL PORT
CSYNC FORMING
7455
CTL PROCESSING
7460-B
SAA 1310
ON/OFF φ 180°
REF
RESET GENERATOR
OPTION
SHUTTLE ENCODER
KEYBOARD MATRIX
FTD DISPLAY
7201
TMP87xxxx
CONTROL µP
DISPLAY AND KEYBOARD CONTROL
IR RECEIVER
7203
EEPROM
7890
CAPSTAN MOTOR UNIT
MOTOR DRIVE
COMMU-TATION LOGIC
HALL U
HALL V
HALL W
FG
HEAD MOTOR DRIVER
7300
TDA5241
HEAD-DISC MOTOR
POS
PS
SUPPLY VOLTAGES AND BUS DIAGRAM
AF
AL
I/O
FV
HA
QNIC
BLOCK DIAGRAM AUDIO
VS-S
VS
I/O
FV
HA
VP/PD
OSD
FM
BLOCK DIAGRAM VIDEO
A: DC, 1 V/Div, 5
T 7463 Emitter
A: DC, 500mV/Di
Connector 1930
A: DC, 1 V/Div, 1
IC 7460 Pin 2
A: DC, 500mV/Di
Connector 1930
A: DC, 2 V/Div, 1
Connector 1930
QBD_DIG.DWG PIC 970217

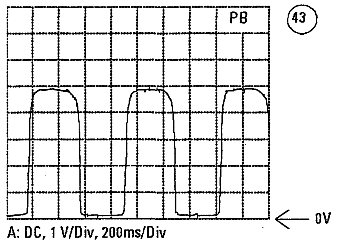
Interconnections
AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14


CAPSTAN MOTOR UNIT
HEAD MOTOR DRIVER
HEAD-DISC MOTOR
LLER
TAL2
TAL1
1400
10MHz
25 CAP
24 REEL
22 OFP
21 FFP
18 SWIN
20 SWIN
6 CSYNC1
13 FGD
5 CREV
50 TRIV
37 CSCP
27 PBV
19 HP2
23 CROT
34 8SC1
53 8SC2
7 ENVC
48 CKDET
29 MTA
49 AGC
54 TRIA/DC
38 IRAF
60 SDA2
59 SCL2
4 ISWS
12 PG/FG
3 IWIND
33 IREV
61 CSI
1 FDME
32 CSW
CAP
REEL
OFP(OSD)
3571 not for OSD
3437
3438
3435
FFP(VS)
SWIN(HV)
CSYNC FORMING
7455
CSYNC2(OSD)
CSYNC(VS)
7460-E
FG
CREV
TRIV(HV)
CSCP(VS)
PBV(VS-SEC)
HP2(AF/HA)
CROT(VS)
8SC1(ID)
8SC2(ID)
ENVC(HV)
CKDET(VS)
MTA(AL)
AGC(FV)
TRIA/DC(AF)
IRAF(HA)
SDA2(VS)
SCL2(VS)
ISWS(VS)
PG/FG
IWIND
to 7460-B
IREV(VS,AL)
CSI(VS,VS-SEC)
FDME(FM)
CSW(PS)
47
48
46
50
58
55
56
57
5VD
3482
1946-4
1946-5
1946-6
1946-2
1946-7
1946-1
1946-8
1946-3
9/14VM2
GNDM
GNDD
MOTOR DRIVE
COMMU-TATION LOGIC
FG1
FG2
U
V
W
U+
U−
V+
V−
W+
W−
HALL U
HALL V
HALL W
14VM1
5300
7300
TDA5241
3313
REEL
MOTØ
MOT1
MOT2
MOT3
POS
1930-4
1930-1
1930-3
1930-2
1930-5
1930-6
PG/FG
ISTBY
CSW
HEHI
HELO
14VM1
−28V
9/14 VM2
5VD
5VASW
PS
SUPPLY VOLTAGES AND BUS DIAGRAM
HP2
SDA
SCL
TRIA/ALI
MTA
IREV
SDA2
SCL2
SFS
IRAF
AF
AL
I/O
FV
HA
QNIC
BLOCK DIAGRAM AUDIO
CSI
PBV
ISWS
CROT
CSCP
CKDET
FFP
CSYNC
8CS2
8SC1
PSS
AGC
AFC
SB1
SWIN
TRIV
ENVC
OCS
ODAT
OCLK
OFP
CSYNC2
FDME
VS−S
VS
VP/PD
OSD
FM
BLOCK DIAGRAM VIDEO
26,43,57
7890
EEPROM
SDA
SCL
GNDD

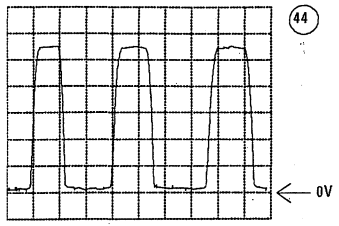
Interconnections
AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14



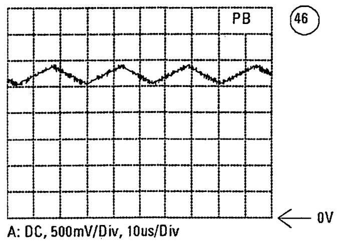
A: DC, 1 V/Div, 5ms/Div
T 7463 Emitter



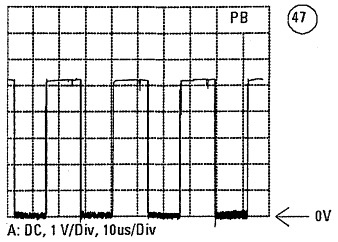
A: DC, 1 V/Div, 200ms/Div
IC 7460 Pin 6, 7



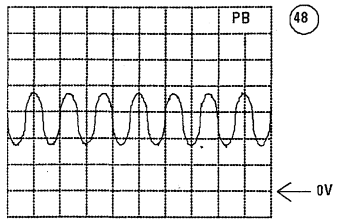
A: DC, 1 V/Div, 10ms/Div
7466



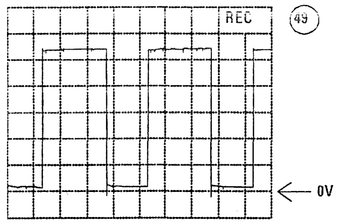
A: DC, 500mV/Div, 10us/Div
Connector 1930 Pin 6



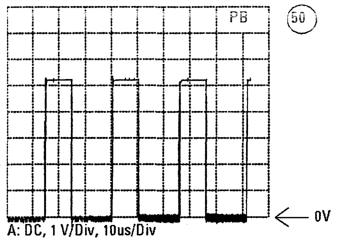
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 25



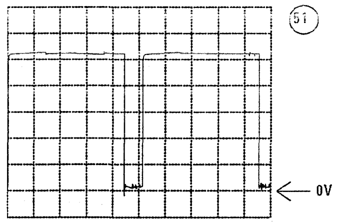
A: DC, 1 V/Div, 1ms/Div
Connector 1946 Pin 4



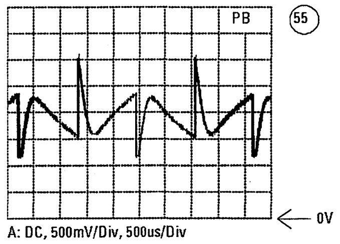
A: DC, 1 V/Div, 10ms/Div
IC 7460 Pin 2



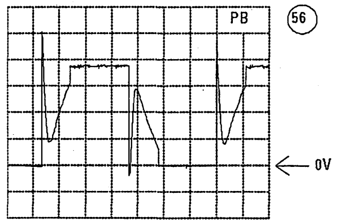
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 24



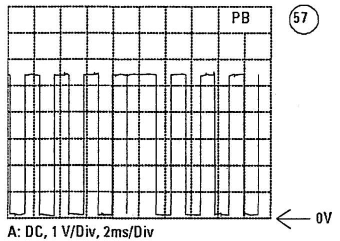
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 10



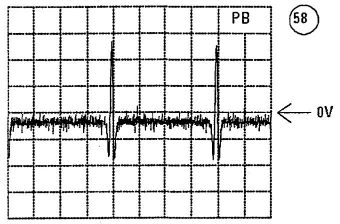
A: DC, 500mV/Div, 500us/Div
Connector 1930 Pin 4



A: DC, 2 V/Div, 1ms/Div
Connector 1930 Pin 1, 2, 3

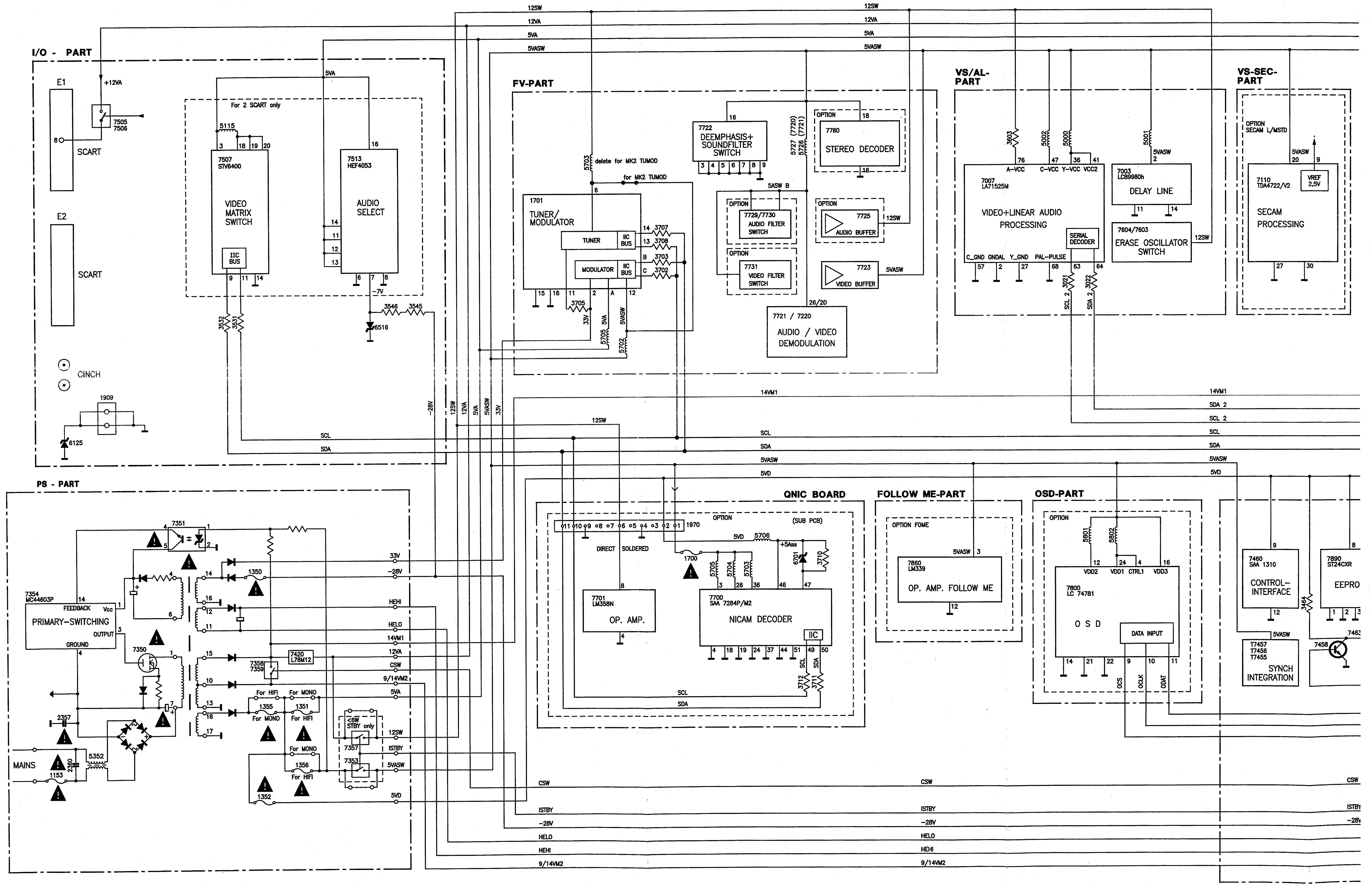


A: DC, 1 V/Div, 2ms/Div
IC 7400 Pin 12



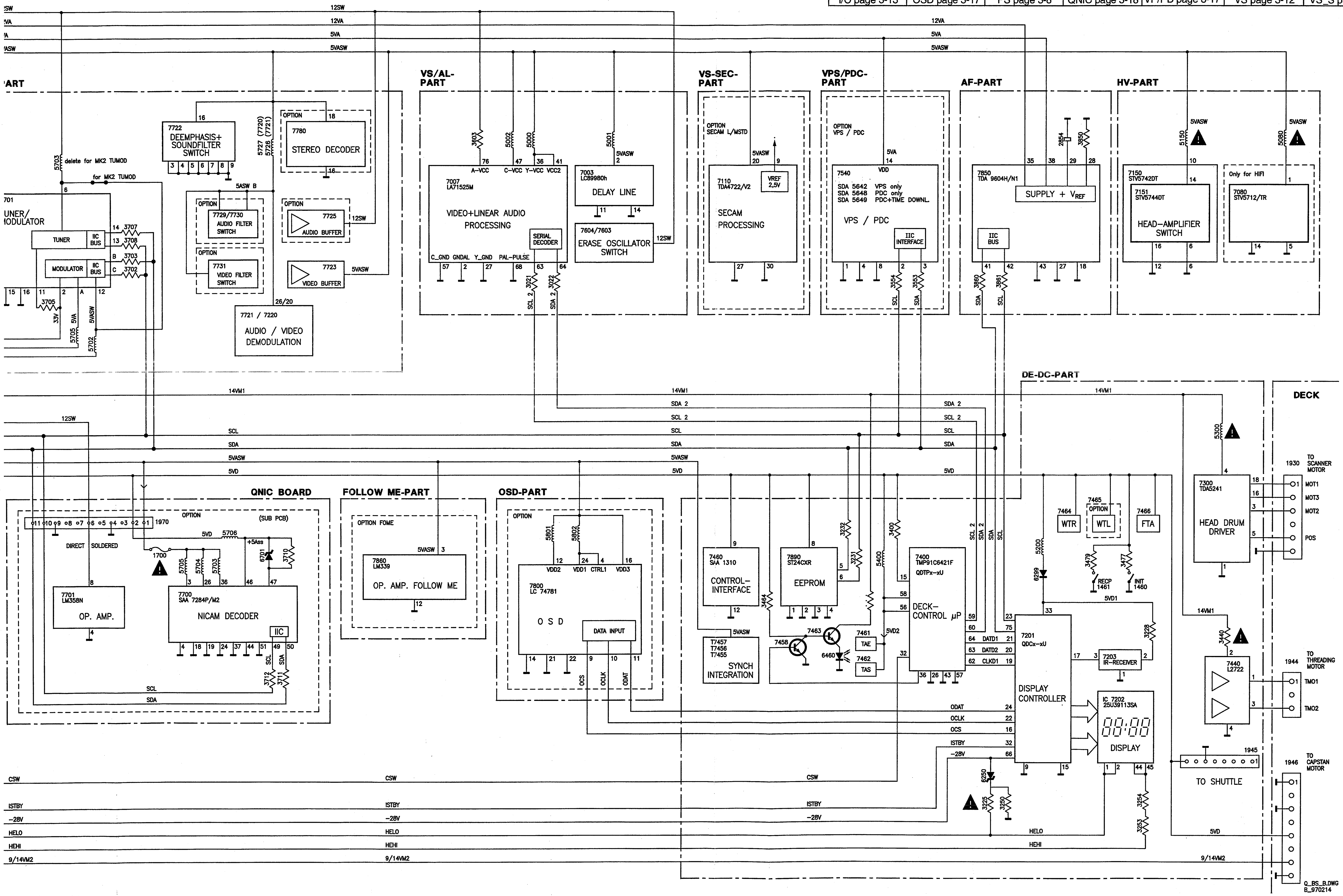
A: DC, 2 V/Div, 10ms/Div
Connector 1930 Pin 5

Supply Voltages and Bus Diagram

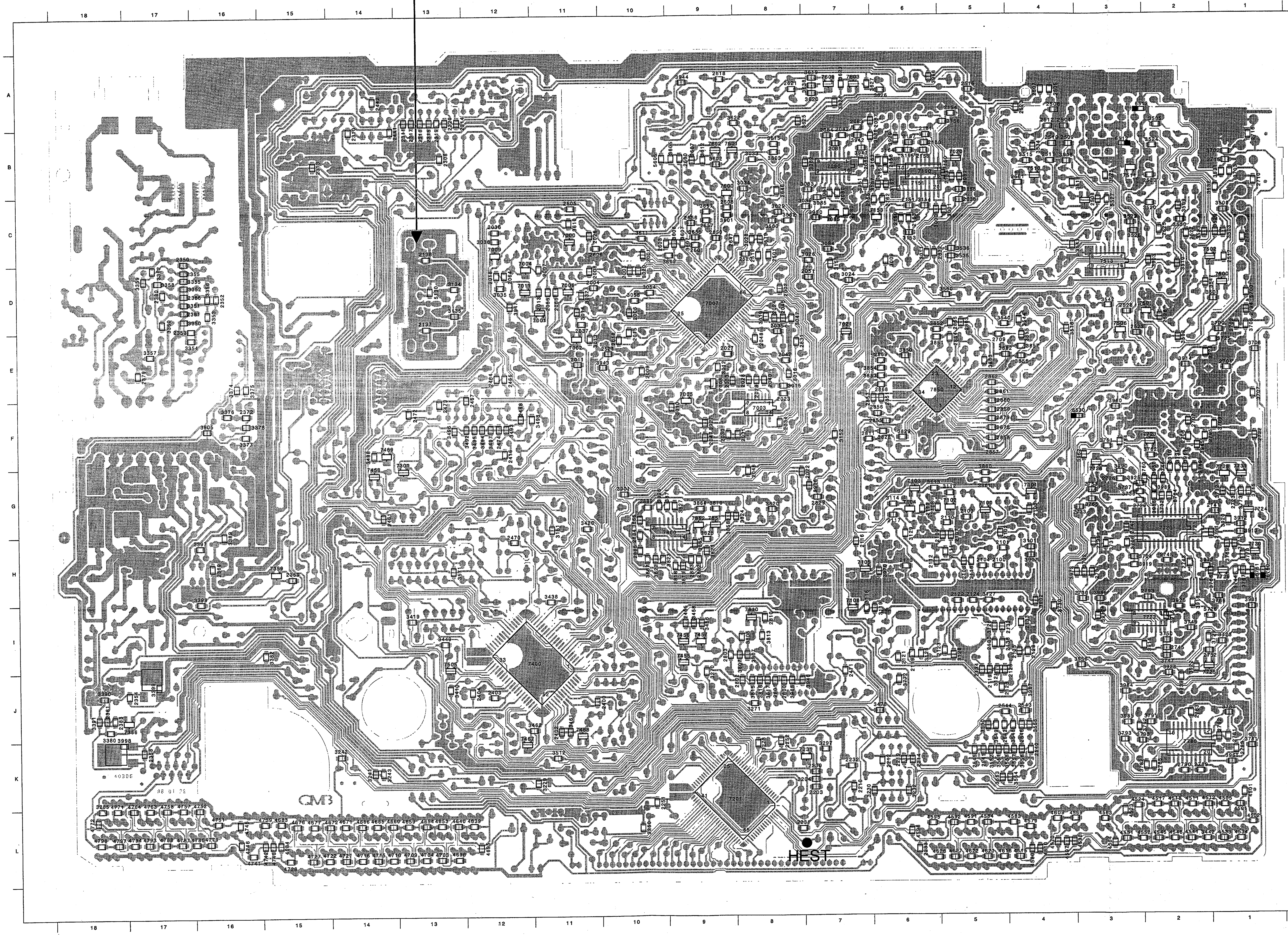

12SW
12VA
5VA
5VASW
I/O - PART
E1
+12VA
7505
7506
SCART
E2
SCART
CINCH
1909
6125
For 2 SCART only
5115
7507
STV6400
VIDEO MATRIX SWITCH
IIC BUS
7513
HEF4053
AUDIO SELECT
-7V
3546
3545
6516
3532
3531
SCL
SDA
FV-PART
5703
delete for MK2 TUMOD
for MK2 TUMOD
1701
TUNER/ MODULATOR
TUNER
MODULATOR
IIC BUS
3707
3708
3703
3702
3705
5705
5702
7722
DEEMPHASIS+ SOUNDFILTER SWITCH
5727 (7720)
5726 (7721)
OPTION
7780
STEREO DECODER
5ASW B
7729/7730
AUDIO FILTER SWITCH
7731
VIDEO FILTER SWITCH
7725
AUDIO BUFFER
7723
VIDEO BUFFER
7721 / 7220
AUDIO / VIDEO DEMODULATION
VS/AL-PART
3603
5002
5000
7007
LA71525M
A-VCC
C-VCC
Y-VCC
VCC2
VIDEO+LINEAR AUDIO PROCESSING
SERIAL DECODER
C_GND
GNDAL
Y_GND
PAL-PULSE
3021
3022
SCL 2
SDA 2
5001
7003
LC89980h
DELAY LINE
7604/7603
ERASE OSCILLATOR SWITCH
VS-SEC-PART
OPTION SECAM L/MSTD
7110
TDA4722/V2
VREF 2,5V
SECAM PROCESSING
14VM1
5VD
PS - PART
7351
7354
MC44603P
FEEDBACK
Vcc
PRIMARY-SWITCHING
OUTPUT
GROUND
7350
1350
2357
2360
5352
MAINS
1153
33V
-28V
HEHI
HELO
12VA
CSW
9/14VM2
7420
L78M12
7358
7359
For HIFI
For MONO
1355
1351
<6W STBY only
7357
7353
1356
1352
ISTBY
QNIC BOARD
(SUB PCB)
1970
DIRECT
SOLDERED
5706
+5Ass
6701
3710
1700
5704
7701
LM358N
OP. AMP.
7700
SAA 7284P/M2
NICAM DECODER
IIC
3712
3711
FOLLOW ME-PART
OPTION FOME
7860
LM339
OP. AMP. FOLLOW ME
OSD-PART
5801
5802
VDD2
VDD1
CTRL1
VDD3
7800
LC 74781
O S D
DATA INPUT
OCS
OCLK
ODAT
7460
SAA 1310
CONTROL-INTERFACE
3464
7890
ST24CXR
EEPRO
T7457
T7456
T7455
SYNCH INTEGRATION
7458
7463

Interconnections:

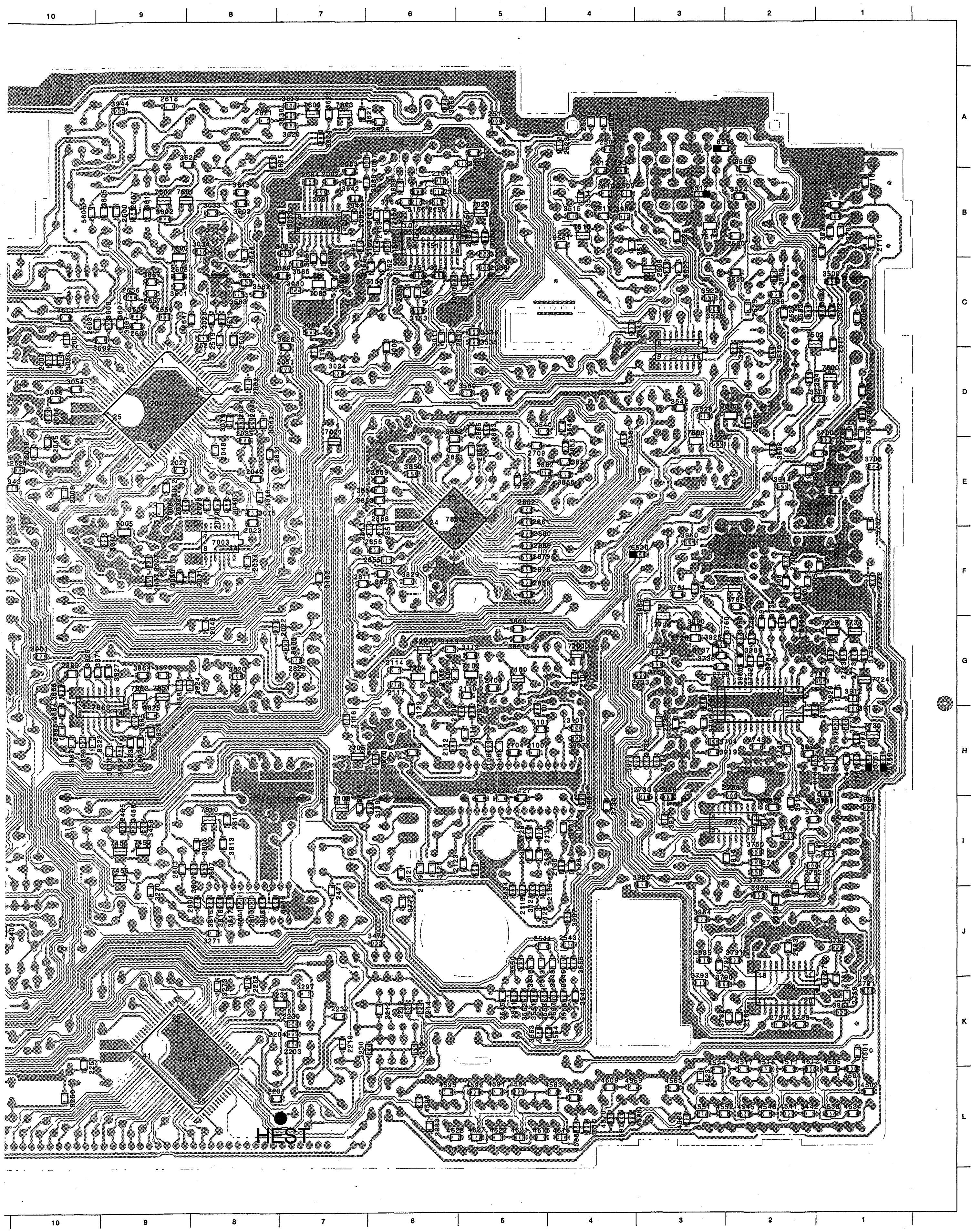
AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14


12SW
12VA
5VA
5VASW
PART
VS/AL-PART
VS-SEC-PART
VPS/PDC-PART
AF-PART
HV-PART
delete for MK2 TUMOD
for MK2 TUMOD
TUNER/MODULATOR
TUNER
MODULATOR
IIC BUS
7722 DEEMPHASIS+SOUNDFILTER SWITCH
OPTION 7780 STEREO DECODER
OPTION 7729/7730 AUDIO FILTER SWITCH
OPTION 7731 VIDEO FILTER SWITCH
OPTION 7725 AUDIO BUFFER
7723 VIDEO BUFFER
7721 / 7220 AUDIO / VIDEO DEMODULATION
7007 LA71525M VIDEO+LINEAR AUDIO PROCESSING
SERIAL DECODER
A-VCC C-VCC Y-VCC VCC2
C_GND GNDAL Y_GND PAL-PULSE
SCL 2 SDA 2
7003 LC89980h DELAY LINE
7604/7603 ERASE OSCILLATOR SWITCH
OPTION SECAM L/MSTD
7110 TDA4722/V2
VREF 2,5V
SECAM PROCESSING
OPTION VPS / PDC
7540 SDA 5642 VPS only SDA 5648 PDC only SDA 5649 PDC+TIME DOWNL.
VPS / PDC
IIC INTERFACE
7850 TDA 9604H/N1
SUPPLY + V_REF
IIC BUS
7150 STV5742DT
7151 STV5744DT
HEAD-AMPLIFIER SWITCH
Only for HIFI
7080 STV5712/TR
DE-DC-PART
DECK
14VM1
SDA 2
SCL 2
SCL
SDA
5VASW
5VD
QNIC BOARD
FOLLOW ME-PART
OSD-PART
OPTION (SUB PCB) 1970
DIRECT SOLDERED
1700
+5Ass
7701 LM358N OP. AMP.
7700 SAA 7284P/M2 NICAM DECODER
IIC
OPTION FOME
7860 LM339 OP. AMP. FOLLOW ME
OPTION
7800 LC 74781 O S D
VDD2 VDD1 CTRL1 VDD3
DATA INPUT
OCS OCLK ODAT
7460 SAA 1310 CONTROL-INTERFACE
7890 ST24CXR EEPROM
7400 TMP91C6421F QDTPx-xU DECK-CONTROL µP
T7457 T7456 T7455 SYNCH INTEGRATION
7458 7463 6460
7461 TAE
7462 TAS
5VD2
DATD1 DATD2 CLKD1
7464 WTR
7465 OPTION WTL
7466 FTA
RECP 1461
INIT 1460
5VD1
7201 QDCx-xU DISPLAY CONTROLLER
7203 IR-RECEIVER
IC 7202 25U39113SA DISPLAY
ODAT OCLK OCS ISTBY -28V
7300 TDA5241 HEAD DRUM DRIVER
1930 TO SCANNER MOTOR
MOT1 MOT3 MOT2 POS
7440 L2722
1944 TO THREADING MOTOR
TMO1 TMO2
1945 TO SHUTTLE
1946 TO CAPSTAN MOTOR
CSW
ISTBY
-28V
HELO
HEHI
9/14VM2
Q_BS_B.DWG B_970214

Mother Board AMB - solder side


Layout for cinch print rear

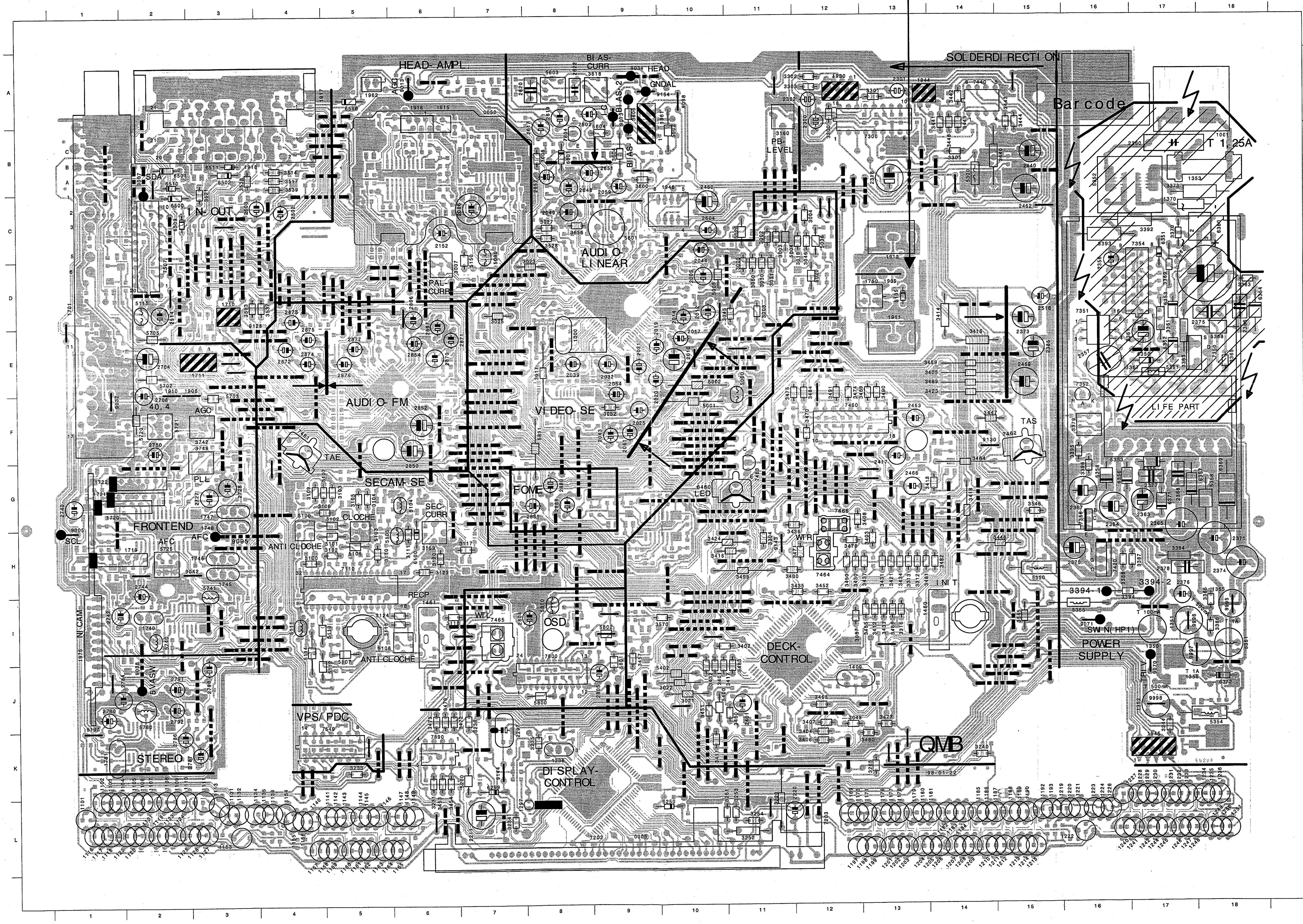
2001	C	10	2317	A	13	2785	K	2	3351	D
2002	D	8	2319	A	13	2788	K	1	3352	D
2003	D	10	2320	A	13	2789	K	2	3353	D
2004	D	11	2350	C	17	2790	K	2	3354	E
2006	D	10	2352	D	16	2793	H	2	3355	D
2007	D	11	2353	D	17	2794	D	1	3356	D
2008	D	11	2354	J	17	2795	F	2	3357	E
2009	E	10	2355	D	17	2800	J	8	3358	D
2011	E	11	2358	K	17	2801	J	8	3359	D
2013	D	11	2359	H	15	2802	J	8	3360	D
2015	E	10	2369	H	16	2803	I	9	3362	D
2016	E	10	2372	F	16	2810	I	8	3374	E
2018	D	12	2379	E	17	2811	F	7	3375	E
2022	G	8	2380	D	17	2829	G	7	3376	F
2023	E	8	2381	D	17	2831	E	8	3377	F
2024	D	8	2383	J	18	2832	C	6	3378	F
2026	C	11	2386	D	17	2851	F	6	3380	J
2027	E	9	2400	J	11	2853	F	6	3381	J
2028	E	8	2402	J	11	2855	F	6	3382	I
2029	E	8	2403	J	12	2856	F	6	3389	H
2030	F	9	2404	J	12	2857	F	5	3390	J
2031	F	8	2416	F	12	2858	F	5	3391	J
2033	E	9	2441	B	14	2859	F	5	3397	H
2034	F	8	2442	A	14	2860	F	5	3398	I
2035	E	8	2455	I	9	2861	E	5	3410	J
2036	C	12	2461	G	14	2862	E	5	3419	I
2037	D	11	2464	E	12	2863	D	5	3420	G
2038	C	5	2465	E	12	2864	E	5	3438	I
2040	E	8	2467	F	12	2865	D	5	3449	I
2042	E	8	2468	F	12	2868	E	6	3456	I
2045	D	8	2470	H	12	2869	E	6	3458	I
2046	G	8	2471	J	7	2878	F	5	3461	J
2047	F	9	2472	F	13	2879	F	5	3462	J
2048	E	8	2473	F	13	2882	H	9	3478	J
2051	D	7	2474	F	12	2883	H	9	3488	F
2055	D	11	2501	C	8	2884	H	10	3492	F
2064	D	12	2504	B	4	2885	H	10	3493	F
2066	D	11	2505	A	4	2889	G	10	3494	F
2080	C	7	2506	A	4	3000	C	6	3495	F
2081	B	7	2507	A	4	3001	C	5	3496	F
2082	B	7	2508	C	3	3009	C	6	3497	F
2083	B	7	2509	B	4	3010	F	9	3498	F
2084	B	7	2510	B	4	3011	C	6	3500	C
2085	B	7	2511	B	4	3012	E	9	3501	D
2087	A	6	2512	B	4	3013	E	11	3502	E
2100	H	5	2515	A	5	3014	D	11	3503	C
2101	H	5	2517	C	1	3015	E	8	3505	E
2102	H	5	2519	C	8	3016	E	8	3509	C
2103	G	5	2520	C	8	3019	D	8	3510	D
2104	H	5	2521	E	10	3020	D	10	3512	K
2105	H	5	2523	E	3	3024	D	7	3515	E
2106	G	4	2524	C	2	3026	C	7	3516	E
2107	H	5	2525	C	2	3028	C	8	3518	E
2108	G	6	2526	D	2	3029	C	8	3519	C
2109	H	5	2527	C	2	3032	D	11	3520	C
2110	G	5	2528	D	3	3033	B	8	3522	C
2111	H	5	2530	B	2	3034	B	8	3523	A
2112	H	6	2540	K	4	3035	D	12	3524	E
2113	H	6	2541	K	5	3036	C	12	3525	E
2115	G	6	2542	J	5	3047	D	8	3526	C
2116	H	7	2543	J	4	3051	B	5	3527	C
2117	G	6	2544	J	5	3054	D	10	3529	C
2118	H	5	2545	K	5	3055	D	10	3530	C
2119	I	6	2546	J	4	3080	C	7	3531	E
2121	I	6	2600	B	9	3081	C	7	3532	E
2122	I	5	2601	C	9	3082	B	7	3533	C
2123	I	5	2603	C	9	3083	B	7	3534	E
2124	I	5	2605	C	11	3084	C	7	3535	C
2125	J	5	2606	C	11	3085	C	7	3536	C
2126	J	5	2607	B	9	3086	B	6	3540	D
2128	I	4	2608	C	9	3089	C	7	3542	D
2129	J	5	2618	A	9	3101	H	4	3543	C
2130	I	5	2621	A	8	3112	G	5	3544	D
2132	I	5	2646	B	8	3113	G	6	3547	D
2133	I	5	2647	C	8	3114	G	6	3548	J
2134	J	5	2650	C	9	3116	I	7	3549	J
2135	I	4	2656	C	9	3119	I	6	3550	J
2137	D	13	2657	C	9	3121	J	5	3551	K
2138	C	13	2700	E	1	3122	I	4	3552	K
2150	C	6	2701	E	1	3125	I	6	3553	K
2151	C	6	2702	D	1	3126	I	5	3554	K
2153	B	5	2705	C	1	3127	I	5	3555	J
2154	A	5	2706	F	2	3128	I	5	3556	K
2155	C	6	2707	F	2	3129	H	6	3557	K
2156	B	6	2709	E	5	3134	D	13	3558	K
2157	B	6	2710	B	1	3135	D	13	3560	D
2158	B	6	2715	B	1	3151	G	11	3561	E
2159	B	6	2716	B	1	3152	F	7	3562	C
2160	B	6	2722	F	1	3153	C	6	3563	C
2161	B	6	2723	G	1	3154	C	6	3571	H
2162	C	6	2726	G	3	3155	B	5	3601	C
2163	C	6	2729	G	3	3156	A	5	3602	B
2203	K	7	2730	I	3	3157	B	6	3603	B
2204	K	7	2731	H	3	3158	D	7	3605	E
2210	K	7	2732	H	3	3162	B	6	3607	C
2212	K	6	2733	G	3	3163	B	6	3608	C
2213	K	6	2734	F	3	3164	B	6	3609	C
2214	K	6	2735	H	3	3165	B	6	3610	C
2230	K	7	2741	G	1	3229	K	11	3611	C
2231	L	8	2743	H	2	3230	K	6	3612	B
2232	K	7	2745	I	2	3232	K	6	3615	E
2233	L	6	2746	G	2	3241	K	14	3619	A
2251	K	10	2747	G	3	3242	K	14	3620	A
2252	K	8	2748	H	2	3243	K	14	3622	A
2308	B	13	2749	G	2	3245	L	18	3623	A
2310	B	14	2751	H	2	3250	L	10	3624	A
2311	A	13	2752	I	2	3270	J	9	3625	A
2313	B	15	2753	G	3	3271	J	8	3626	A
2314	A	13	2781	K	1	3273	K	8	3627	A
2315	A	13	2782	K	1	3297	K	7	3638	A
2316	A	13	2783	J	2	3350	D	17	3655	C



2001	C	10	2317	A	13	2785	K	2	3351	D	17	3657	C	9	3942	B	7	4794	L	17
2002	D	8	2319	A	13	2788	K	1	3352	D	17	3702	B	1	3943	E	10	4797	L	18
2003	D	10	2320	A	13	2789	K	2	3353	D	16	3703	B	1	3944	A	9	4798	L	18
2004	D	11	2350	C	17	2790	K	2	3354	E	17	3704	H	3	3945	F	2	5130	D	13
2006	D	10	2352	D	16	2793	H	2	3355	D	17	3705	D	1	3946	J	8	5605	B	10
2007	D	11	2353	D	17	2794	D	1	3356	D	16	3706	H	3	3947	D	12	5700	D	1
2008	D	11	2354	J	17	2795	F	2	3357	E	17	3707	E	1	3950	G	2	5726	I	2
2009	E	10	2355	D	17	2800	J	8	3358	D	17	3708	E	1	3951	B	7	6512	B	3
2011	E	11	2358	K	17	2801	J	8	3359	D	17	3709	F	1	3956	I	3	6513	A	3
2013	D	11	2359	H	15	2802	J	8	3360	D	17	3712	G	1	3960	F	3	6530	F	3
2015	E	10	2369	H	16	2803	I	9	3362	D	17	3715	G	1	3961	K	1	6760	H	1
2016	E	10	2372	F	16	2810	I	8	3374	E	16	3723	I	1	3962	F	3	6761	H	1
2018	D	12	2379	E	17	2811	F	7	3375	E	16	3725	E	1	3965	J	8	7000	C	11
2022	G	8	2380	D	17	2829	G	7	3376	F	16	3726	E	2	3966	A	6	7001	D	11
2023	E	8	2381	D	17	2831	E	8	3377	F	16	3729	I	2	3967	J	4	7002	E	11
2024	D	8	2383	J	18	2832	C	6	3378	F	16	3730	I	4	3970	H	6	7003	F	8
2026	C	11	2386	D	17	2851	F	6	3380	J	18	3731	H	3	3972	H	2	7004	D	12
2027	E	9	2400	J	11	2853	F	6	3381	J	18	3732	G	2	3973	H	3	7005	F	9
2028	E	8	2402	J	11	2855	F	6	3382	I	15	3735	G	2	3984	J	3	7006	D	11
2029	E	8	2403	J	12	2856	F	6	3389	H	16	3736	G	3	3985	J	3	7007	D	9
2030	F	9	2404	J	12	2857	F	5	3390	J	18	3737	G	3	3986	I	3	7008	E	9
2031	F	8	2416	F	12	2858	F	5	3391	J	18	3739	J	2	3988	G	2	7009	C	12
2033	E	9	2441	B	14	2859	F	5	3397	H	16	3744	H	1	3989	G	2	7011	D	12
2034	F	8	2442	A	14	2860	F	5	3398	I	16	3747	I	2	3990	G	3	7020	B	5
2035	E	8	2455	I	9	2861	E	5	3410	J	13	3749	I	2	3998	K	18	7021	E	7
2036	C	12	2461	G	14	2862	E	5	3419	I	13	3750	I	2	3999	J	17	7080	B	7
2037	D	11	2464	E	12	2863	D	5	3420	G	11	3760	G	2	4501	K	1	7085	C	7
2038	C	5	2465	E	12	2864	E	5	3438	I	11	3761	F	3	4502	L	1	7100	G	5
2040	E	8	2467	F	12	2865	D	5	3449	I	13	3762	F	2	4505	L	1	7101	G	4
2042	E	8	2468	F	12	2868	E	6	3456	I	9	3764	G	2	4506	L	1	7102	G	5
2045	D	8	2470	H	12	2869	E	6	3458	I	9	3765	G	3	4511	L	2	7103	G	6
2046	G	8	2471	J	7	2878	F	5	3461	J	11	3766	H	1	4512	L	2	7104	G	6
2047	F	9	2472	F	13	2879	F	5	3462	J	11	3767	H	1	4517	L	2	7105	H	7
2048	E	8	2473	F	13	2882	H	9	3478	J	6	3768	H	2	4518	L	2	7106	I	7
2051	D	7	2474	F	12	2883	H	9	3488	F	14	3769	H	1	4523	L	3	7150	B	6
2055	D	11	2501	C	8	2884	H	10	3492	F	12	3770	H	1	4524	L	3	7151	B	6
2064	D	12	2504	B	4	2885	H	10	3493	F	12	3771	H	1	4533	L	1	7153	C	6
2066	D	11	2505	A	4	2889	G	10	3494	F	12	3772	J	6	4534	L	1	7201	K	9
2080	C	7	2506	A	4	3000	C	6	3495	F	12	3773	G	1	4541	L	2	7231	K	7
2081	B	7	2507	A	4	3001	C	5	3496	F	13	3780	J	1	4542	L	2	7301	G	13
2082	B	7	2508	C	3	3009	C	6	3497	F	12	3781	K	1	4545	L	2	7353	J	17
2083	B	7	2509	B	4	3010	F	9	3498	F	11	3782	K	2	4546	L	2	7356	J	17
2084	B	7	2510	B	4	3011	C	6	3500	C	1	3790	K	3	4551	L	3	7357	K	18
2085	B	7	2511	B	4	3012	E	9	3501	D	1	3791	J	2	4552	L	3	7359	H	15
2087	A	6	2512	B	4	3013	E	11	3502	E	2	3792	J	3	4563	L	3	7400	I	11
2100	H	5	2515	A	5	3014	D	11	3503	C	1	3793	K	3	4564	L	3	7455	I	9
2101	H	5	2517	C	1	3015	E	8	3505	B	2	3805	I	8	4569	L	4	7456	I	9
2102	H	5	2519	C	8	3016	E	8	3509	C	2	3807	I	8	4570	L	4	7457	I	9
2103	G	5	2520	C	8	3019	D	8	3510	D	2	3808	I	8	4579	L	4	7458	G	14
2104	H	5	2521	E	10	3020	D	10	3512	K	11	3813	I	8	4580	L	4	7467	K	12
2105	H	5	2523	E	3	3024	D	7	3515	B	4	3815	J	8	4583	L	4	7468	J	11
2106	G	4	2524	C	2	3026	C	7	3516	E	4	3816	J	8	4584	L	5	7469	F	14
2107	H	5	2525	C	2	3028	C	8	3518	B	4	3817	J	8	4591	L	5	7500	D	1
2108	G	6	2526	D	2	3029	C	8	3519	C	8	3818	H	9	4592	L	5	7501	D	2
2109	H	5	2527	C	2	3032	D	11	3520	C	2	3819	H	9	4595	L	6	7502	C	2
2110	G	5	2528	D	3	3033	B	8	3522	C	3	3820	G	8	4596	L	6	7505	I	13
2111	H	5	2530	B	2	3034	B	8	3523	A	4	3821	H	9	4597	L	4	7506	E	3
2112	H	6	2540	K	4	3035	D	12	3524	B	2	3822	H	10	4598	L	4	7510	B	4
2113	H	6	2541	K	5	3036	C	12	3525	B	3	3823	H	10	4609	L	4	7511	B	3
2115	G	6	2542	J	5	3047	D	8	3526	C	3	3824	G	8	4610	L	4	7512	C	3
2116	H	7	2543	J	4	3051	B	5	3527	C	3	3825	H	9	4615	L	4	7513	D	3
2117	G	6	2544	J	5	3054	D	10	3529	C	1	3826	G	10	4616	L	5	7600	B	9
2118	H	5	2545	K	5	3055	D	10	3530	C	2	3827	G	9	4621	L	5	7601	B	9
2119	I	6	2546	J	4	3080	C	7	3531	B	1	3828	F	6	4622	L	5	7602	B	9
2121	I	6	2600	B	9	3081	C	7	3532	B	1	3829	F	6	4627	L	5	7603	A	7
2122	I	5	2601	C	9	3082	B	7	3533	C	2	3850	E	6	4628	L	6	7609	A	7
2123	I	5	2603	C	9	3083	B	7	3534	B	4	3851	E	6	4639	L	12	7720	G	2
2124	I	5	2605	C	11	3084	C	7	3535	C	5	3852	E	6	4640	L	13	7721	G	2
2125	J	5	2606	C	11	3085	C	7	3536	C	5	3853	E	6	4653	L	13	7722	I	2
2126	J	5	2607	B	9	3086	B	6	3540	D	5	3854	E	6	4654	L	13	7723	F	2
2128	I	4	2608	C	9	3089	C	7	3542	D	3	3855	E	4	4659	L	13	7724	G	1
2129	J	5	2618	A	9	3101	H	4	3543	C	4	3856	E	4	4660	L	14	7725	I	2
2130	I	5	2621	A	8	3112	G	5	3544	D	4	3857	E	4	4665	L	14	7726	F	3
2132	I	5	2646	B	8	3113	G	6	3547	D	2	3858	G	9	4666	L	14	7728	G	1
2133	I	5	2647	C	8	3114	G	6	3548	J	4	3860	G	5	4671	L	14	7729	H	1
2134	J	5	2650	C	9	3116	I	7	3549	J	5	3861	G	5	4672	L	15	7730	H	1
2135	I	4	2656	C	9	3119	I	6	3550	J	5	3862	E	5	4677	L	15	7731	G	1
2137	D	13	2657	C	9	3121	J	5	3551	K	5	3863	E	5	4678	L	15	7780	K	2
2138	C	13	2700	E	1	3122	I	4	3552	K	5	3864	G	9	4683	L	15	7810	I	8
2150	C	6	2701	E	1	3125	I	6	3553	K	5	3865	H	9	4684	L	15	7850	E	6
2151	C	6	2702	D	1	3126	I	5	3554	K	4	3866	G	10	4695	L	12	7851	G	9
2153	B	5	2705	C	1	3127	I	5	3555	J	4	3867	H	10	4696	L	13	7852	G	9
2154	A	5	2706	F	2	3128	I	5	3556	K	4	3870	G	9	4703	L	13	7860	G	9
2155	C	6	2707	F	2	3129	H	6	3557	K	4	3871	G	10	4704	L	13			
2156	B	6	2709	E	5	3134	D	13	3558	K	5	3901	G	10	4709	L	13			
2157	B	6	2710	B	1	3135	D	13	3560	D	5	3902	I	4	4710	L	14			
2158	B	6	2715	B	1	3151	G	11	3561	B	4	3903	D	2	4715	L	14			
2159	B	6	2716	B	1	3152	F	7	3562	C	8	3905	F	16	4716	L	14			
2160	B	6	2722	F	1	3153	C	6	3563	C	8	3906	G	7	4721	L	14			
2161	B	6	2723	G	1	3154	C	6	3571	H	13	3907	H	4	4722	L	15			
2162	C	6	2726	G	3	3155	B	5	3601	C	9	3908	B	4	4727	L	15			
2163	C	6	2729	G	3	3156	A	5	3602	B	9	3910	G	2	4728	L	15			
2203	K	7	2730	I	3	3157	B	6	3603	B	8	3911	G	2	4739	L	15			
2204	K	7	2731	H	3	3158	D	7	3605	B	9	3912	G	1	4740	L	15			
2210	K	7	2732	H	3	3162	B	6	3607	C	9	3913	H	1	4741	L	16			
2212	K	6	2733	G	3	3163	B	6	3608	C	9	3914	E	2	4742	L	15			
2213	K	6	2734	F	3	3164	B	6	3609	C	9	3915	I	2	4745	L	16			
2214	K	6	2735	H	3	3165	B	6	3610	C	11	3916	I	2	4746	L	16			
2230	K	7	2741	G	1	3229	K	11	3611	C	10	3917	I	3	4751	L	16			
2231	L	8	2743	H	2	3230	K	6	3612	B	9	3918	H	3	4752	L	16			
2232	K	7	2745	I	2	3232	K	6	3615	B	8	3919	I	2	4757	L	17			
2233	L	6	2746	G	2	3241	K	14	3619	A	7	3922	J	2	4758	L	17			
2251	K	10	2747	G	3	3242	K	14	3620	A	7	3923	G	1	4763	L	17			
2252	K	8	2748	H	2	3243	K	14	3622	A	8	3925	G	3	4764	L	17			
2308	B	13	2749	G	2	3245	L	18	3623	A	7	3926	I	2	4771	L	18			
2310	B	14	2751	H	2	3250	L	10	3624	A	7	3927	F	9	4772	L	18			
2311	A	13	2752	I	2	3270	J	9	3625	A	8	3928	J	2	4779	L	16			
2313	B	15	2753	G	3	3271	J	8	3626	A	6	3929	B	6	4780	L	16			
2314	A	13	2781	K	1	3273	K	8	3627	A	7	3930	C	7	4787	L	17			
2315	A	13	2782	K	1	3297	K	7	3638	A	7	3931	I	1	4788	L	17			
2316	A	13	2783	J	2	3350	D	17	3655	C	9	3941	B	7	4793	L	17			

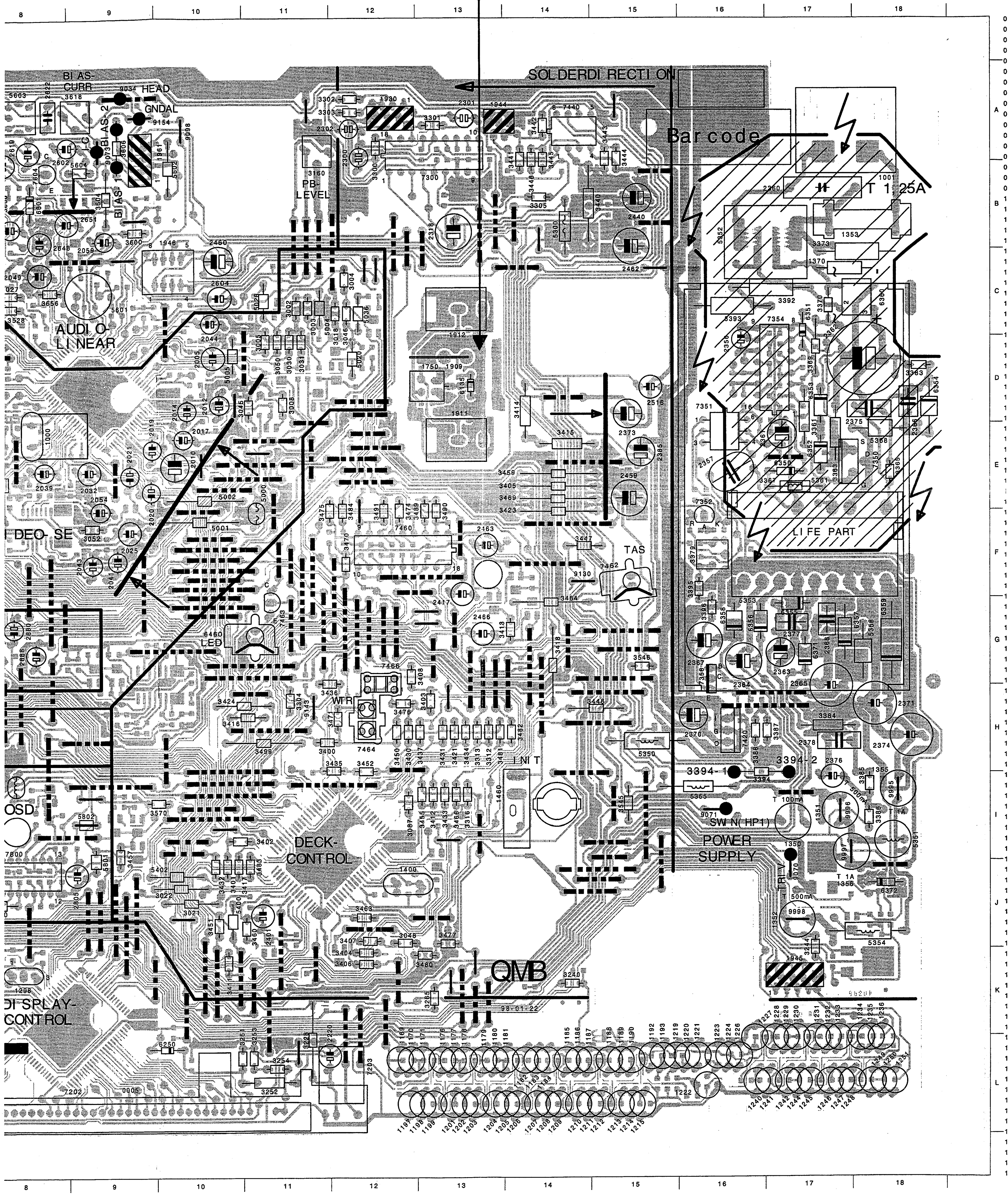
Mother Board AMB - component side

Layout for cinch print rear


HEAD-AMPL
BIAS-CURR
HEAD
GNDAL
BIAS 2
BIAS 1
SOLDERDIRECTION
Bar code
T 1.25A
PB-LEVEL
SDA
IN-OUT
AGC
AUDIO-LINEAR
PAL-CURR
AUDIO-FM
VIDEO-SE
TAE
SECAM-SE
FOME
PLL
FRONTEND
AFC
SCL
ANTI CLOCHE
CLOCHE
SEC-CURR
LED
WTR
TAS
LIFE PART
INIT
RECP
WTL
OSD
DECK-CONTROL
POWER SUPPLY
SW N(HP1)
3394-1
3394-2
NICAM
6 NASW
STEREO
VPS/PDC
DISPLAY-CONTROL
QMB
T 1A
500mA
98-01-22

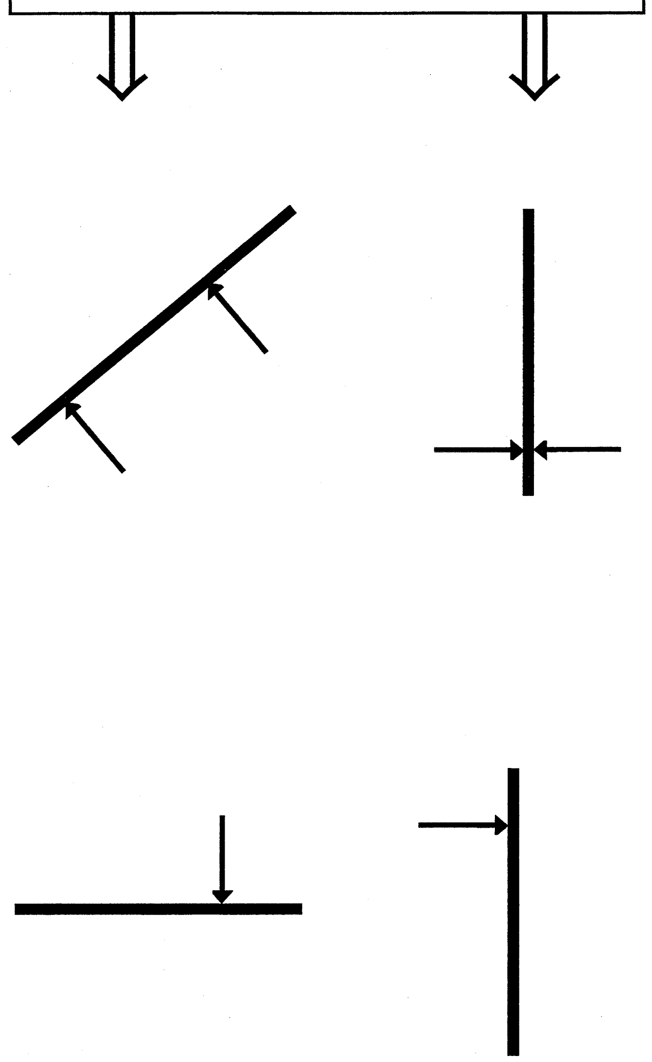
0005	L	9	1221	L	16
0007	I	7	1222	L	16
0008	G	12	1223	L	16
0020	F	4	1224	L	16
0021	G	11	1226	L	16
0022	F	15	1227	L	16
0030	I	5	1228	L	17
0031	I	14	1229	L	17
0050	A	7	1230	L	17
0051	D	6	1231	L	17
0060	F	5	1232	L	17
0061	I	8	1233	L	17
0062	F	13	1234	L	18
0075	C	16	1235	L	18
0080	F	18	1236	L	18
0100	B	15	1240	L	16
0200	C	14	1241	L	17
1000	E	8	1242	L	17
1001	A	17	1244	L	17
1101	L	1	1245	L	17
1102	L	1	1246	L	17
1103	L	1	1247	L	17
1104	L	1	1248	L	17
1105	L	2	1249	L	18
1106	L	2	1250	L	18
1107	L	2	1251	L	18
1108	L	2	1297	L	8
1109	L	2	1298	K	8
1110	L	2	1350	I	17
1111	L	3	1351	I	17
1113	L	3	1352	J	17
1116	L	1	1353	B	18
1117	L	1	1355	I	18
1118	L	1	1356	I	17
1119	L	2	1370	C	17
1120	L	2	1400	J	12
1121	L	2	1460	I	14
1122	L	2	1461	I	6
1123	L	2	1701	D	1
1124	L	2	1710	D	3
1125	L	2	1711	E	3
1126	L	3	1719	H	1
1127	L	3	1720	G	2
1131	L	3	1721	G	2
1132	L	3	1722	G	2
1134	L	3	1740	I	2
1135	L	4	1745	H	3
1136	L	4	1746	H	3
1140	L	4	1747	G	3
1141	L	5	1748	G	3
1142	L	5	1750	D	13
1143	L	5	1781	K	1
1144	L	5	1908	E	3
1145	L	5	1909	D	13
1146	L	5	1910	E	2
1147	L	6	1911	E	13
1148	L	6	1912	C	13
1149	L	6	1915	A	6
1153	L	3	1916	A	6
1154	L	4	1917	A	3
1155	L	4	1918	B	3
1156	L	4	1930	A	12
1157	L	4	1944	A	13
1158	L	5	1945	K	17
1159	L	5	1946	C	10
1160	L	5	1961	A	9
1161	L	5	1962	A	5
1162	L	5	1969	J	16
1163	L	5	1975	I	1
1164	L	5	2005	D	10
1165	L	6	2010	E	10
1169	L	12	2012	D	10
1170	L	12	2014	D	10
1171	L	13	2017	E	10
1176	L	13	2019	E	9
1177	L	13	2020	E	9
1178	L	13	2021	E	9
1179	L	13	2025	F	9
1180	L	13	2032	E	9
1181	L	14	2039	E	8
1182	L	14	2041	F	9
1183	L	14	2043	F	9
1184	L	14	2044	C	10
1185	L	14	2049	C	8
1186	L	14	2054	F	9
1187	L	14	2059	B	9
1188	L	15	2086	C	7
1189	L	15	2152	C	6
1190	L	15	2211	L	7
1192	L	15	2220	L	11
1193	L	15	2297	K	7
1197	L	12	2300	A	12
1198	L	13	2301	A	13
1199	L	13	2302	A	12
1201	L	13	2318	B	13
1202	L	13	2356	D	16
1203	L	13	2357	E	17
1204	L	13	2360	B	17
1205	L	14	2361	E	17
1206	L	14	2362	D	18
1207	L	14	2363	G	17
1208	L	14	2364	G	16
1209	L	14	2365	H	17
1210	L	14	2366	D	18
1211	L	14	2367	G	16
1212	L	15	2368	G	17
1213	L	15	2370	H	16
1214	L	15	2371	H	18
1215	L	15	2373	D	15
1219	L	15	2374	H	18
1220	L	16	2375	D	18

Layout for cinch print rear

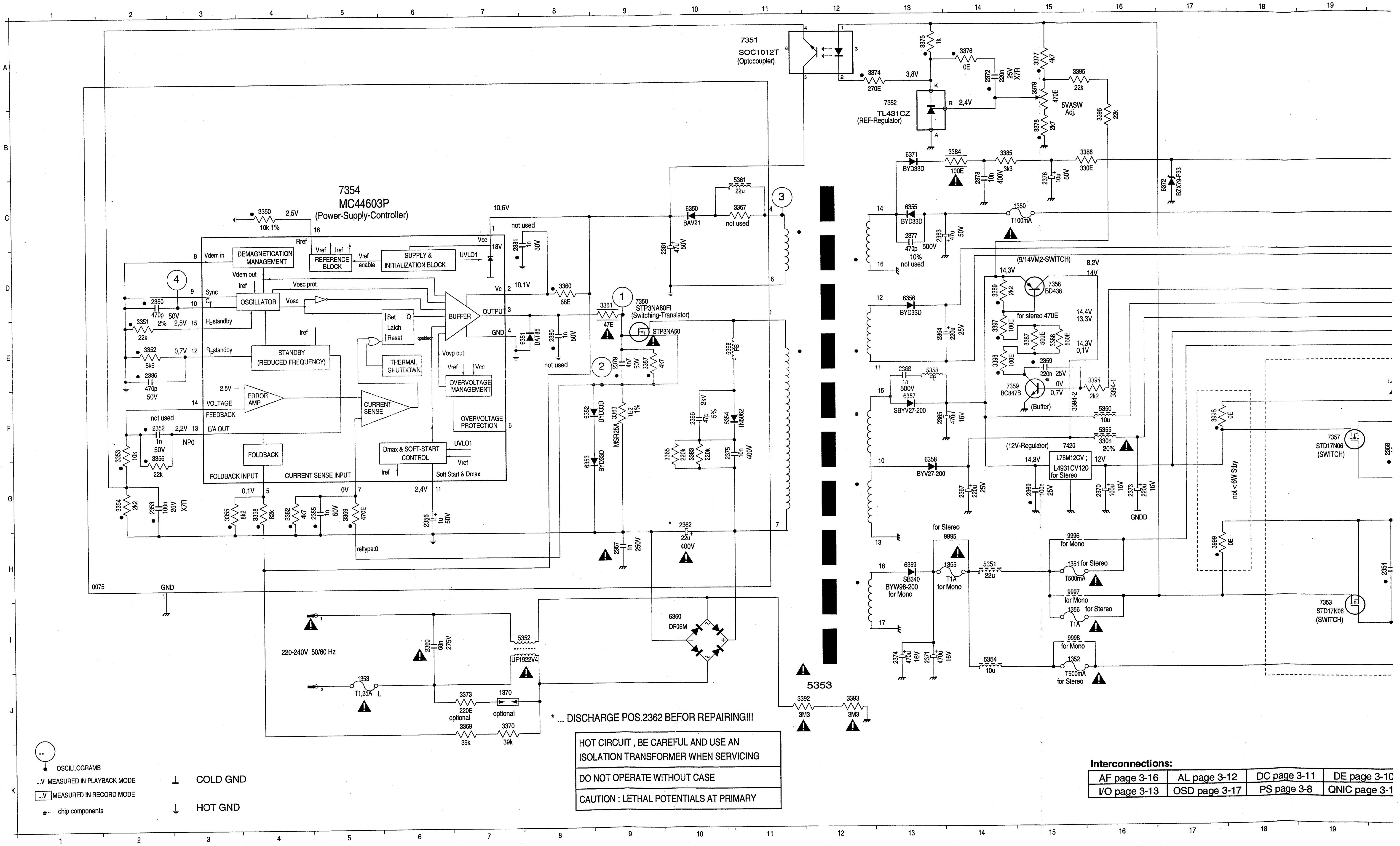


0005 L 9	1221 L 16	2376 I 17	3300 A 12	3656 C 8	9007 B 2	9133 K 7	9250 C 10
0007 I 7	1222 L 16	2377 G 17	3301 A 13	3742 F 3	9008 I 3	9134 J 12	9251 B 2
0008 G 12	1223 L 16	2378 H 17	3302 A 12	3748 F 3	9009 B 11	9135 H 15	9252 F 13
0020 F 4	1224 L 16	2385 E 15	3303 A 12	5000 F 11	9010 B 2	9137 D 12	9259 G 7
0021 G 11	1226 L 16	2401 J 11	3304 H 11	5001 F 10	9011 D 5	9138 C 15	9260 D 5
0022 F 15	1227 L 16	2417 F 13	3305 B 14	5002 E 10	9012 D 5	9139 B 14	9268 I 6
0030 I 5	1228 L 17	2440 B 15	3312 H 13	5004 C 11	9013 A 6	9140 B 13	9269 J 7
0031 I 14	1229 L 17	2459 E 15	3313 H 13	5005 D 10	9014 D 4	9141 G 12	9281 E 14
0050 A 7	1230 L 17	2460 C 10	3316 I 13	5020 D 12	9016 F 4	9142 G 12	9282 L 12
0051 D 6	1231 L 17	2462 B 15	3361 D 17	5026 C 11	9017 C 12	9143 H 11	9283 F 9
0060 F 5	1232 L 17	2463 F 13	3363 E 17	5036 C 12	9018 I 4	9144 K 7	9284 C 4
0061 I 8	1233 L 17	2466 G 13	3365 E 18	5080 C 7	9019 D 2	9145 I 4	9285 F 7
0062 F 13	1234 L 18	2502 C 4	3367 E 17	5100 H 4	9021 E 9	9146 F 7	9286 F 11
0075 C 16	1235 L 18	2503 C 4	3369 D 17	5101 H 5	9022 K 4	9147 D 10	9287 G 11
0080 F 18	1236 L 18	2514 D 2	3370 C 17	5102 G 5	9023 K 4	9148 F 7	9288 J 9
0100 B 15	1240 L 16	2516 D 15	3373 C 18	5103 H 5	9024 D 3	9149 E 7	9289 J 9
0200 C 14	1241 L 17	2602 A 8	3379 F 16	5104 G 6	9026 I 3	9150 A 5	9290 J 9
1000 E 8	1242 L 17	2604 C 10	3383 D 18	5105 H 6	9027 I 3	9151 H 7	9300 I 7
1001 A 17	1244 L 17	2617 B 8	3384 H 17	5106 H 5	9028 H 1	9152 E 3	9301 G 15
1101 L 1	1245 L 17	2619 A 8	3385 I 18	5107 I 5	9029 K 3	9154 A 9	9302 J 14
1102 L 1	1246 L 17	2620 A 8	3386 I 18	5108 I 6	9031 J 3	9155 E 8	9303 J 15
1103 L 1	1247 L 17	2622 A 8	3387 H 17	5111 I 4	9032 F 1	9156 D 7	9304 J 15
1104 L 1	1248 L 17	2648 B 8	3388 H 16	5112 J 4	9033 F 3	9157 G 7	9305 I 15
1105 L 2	1249 L 18	2651 B 8	3392 C 17	5113 I 4	9034 A 9	9158 G 14	9306 E 17
1106 L 2	1250 L 18	2652 B 8	3393 C 16	5114 I 4	9035 H 2	9159 F 11	9307 I 17
1107 L 2	1251 L 18	2704 E 2	3394 I 16	5115 D 2	9036 H 3	9160 K 11	9308 I 15
1108 L 2	1297 L 8	2708 E 2	3395 F 16	5150 D 7	9037 L 6	9161 F 12	9310 I 15
1109 L 2	1298 K 8	2727 G 3	3396 G 16	5200 K 7	9038 J 2	9162 E 4	9311 J 18
1110 L 2	1350 I 17	2728 G 3	3400 H 11	5300 B 14	9039 E 11	9163 I 10	9401 J 10
1111 L 3	1351 I 17	2740 G 1	3401 J 10	5350 H 15	9042 H 3	9164 G 12	9402 L 12
1113 L 3	1352 J 17	2742 I 1	3402 I 10	5351 I 18	9046 J 6	9165 G 7	9403 K 12
1116 L 1	1353 B 18	2744 H 2	3403 H 13	5352 B 17	9048 G 4	9166 E 11	9404 I 13
1117 L 1	1355 I 18	2750 F 2	3404 K 12	5353 F 17	9049 C 4	9167 H 12	9405 J 13
1118 L 1	1356 I 17	2780 J 1	3405 E 14	5354 J 18	9050 K 5	9168 E 7	9406 I 10
1119 L 2	1370 C 17	2784 J 1	3406 K 12	5355 I 16	9051 F 4	9169 D 7	9407 I 10
1120 L 2	1400 J 12	2786 K 2	3407 J 12	5358 G 18	9052 I 7	9170 I 8	9409 H 10
1121 L 2	1460 I 14	2787 K 3	3408 G 12	5361 E 17	9053 E 4	9171 C 9	9410 B 14
1122 L 2	1461 I 6	2791 J 2	3411 K 10	5368 E 18	9054 H 7	9172 E 3	9411 I 10
1123 L 2	1701 D 1	2792 J 2	3412 I 13	5400 J 10	9055 G 7	9173 G 15	9412 I 10
1124 L 2	1710 D 3	2796 J 3	3413 G 14	5402 J 10	9056 H 16	9174 H 8	9413 G 7
1125 L 2	1711 E 3	2804 I 8	3414 D 14	5601 C 9	9057 B 11	9175 H 8	9414 H 10
1126 L 3	1719 H 1	2805 J 9	3415 E 14	5602 B 10	9058 A 5	9176 F 6	9415 G 11
1127 L 3	1720 G 2	2850 F 6	3416 H 11	5603 A 8	9059 H 14	9177 J 7	9416 H 11
1131 L 3	1721 G 2	2852 F 6	3417 J 10	5604 B 9	9060 I 15	9178 J 1	9418 H 11
1132 L 3	1722 G 2	2854 E 6	3418 G 14	5702 E 2	9061 F 11	9179 D 6	9419 K 12
1134 L 3	1740 I 2	2866 D 6	3421 H 13	5703 F 3	9062 F 11	9180 B 5	9420 C 12
1135 L 4	1745 H 3	2867 D 6	3423 F 14	5705 E 2	9063 A 15	9182 B 5	9421 B 15
1136 L 4	1746 H 3	2870 E 6	3424 H 11	5720 F 2	9065 G 11	9183 D 4	9422 I 13
1140 L 4	1747 G 3	2871 E 6	3430 H 12	5721 F 2	9067 G 13	9184 D 3	9423 C 13
1141 L 5	1748 G 3	2872 E 4	3431 H 13	5725 H 2	9068 D 14	9185 C 2	9424 K 13
1142 L 5	1750 D 13	2873 D 4	3432 J 10	5740 I 2	9070 J 17	9186 D 5	9425 B 15
1143 L 5	1781 K 1	2874 E 4	3433 I 13	5741 H 3	9071 I 16	9187 I 7	9431 H 15
1144 L 5	1908 E 3	2875 E 4	3434 H 13	5780 J 2	9072 K 13	9188 F 12	9435 E 12
1145 L 5	1909 D 13	2876 E 5	3435 H 12	5800 J 8	9073 A 9	9189 G 11	9436 E 12
1146 L 5	1910 E 2	2877 E 5	3436 G 11	5801 J 9	9074 K 13	9190 G 12	9437 E 12
1147 L 6	1911 E 13	2880 G 8	3437 H 13	5802 I 9	9075 K 6	9191 J 7	9438 E 12
1148 L 6	1912 C 13	2881 G 8	3440 B 14	5810 I 8	9076 K 13	9192 D 5	9439 F 14
1149 L 6	1915 A 6	2888 G 8	3441 A 14	5831 F 8	9077 K 13	9193 E 7	9440 G 15
1153 L 3	1916 A 6	3002 C 11	3442 A 14	6100 H 6	9078 D 5	9194 D 7	9441 G 14
1154 L 4	1917 A 3	3003 C 11	3443 A 15	6135 D 13	9079 H 8	9195 L 11	9444 H 17
1155 L 4	1918 B 3	3004 C 12	3444 A 15	6250 L 10	9080 F 3	9196 D 2	9501 C 8
1156 L 4	1930 A 12	3005 D 11	3445 A 14	6299 K 7	9081 F 7	9197 K 1	9502 G 8
1157 L 4	1944 A 13	3006 B 8	3446 A 14	6350 E 17	9082 E 3	9198 E 1	9503 G 10
1158 L 5	1945 K 17	3007 D 6	3447 F 14	6351 C 17	9083 D 2	9199 B 11	9504 F 8
1159 L 5	1946 C 10	3008 D 11	3448 H 15	6352 E 17	9084 D 7	9200 B 2	9505 I 9
1160 L 5	1961 A 9	3017 E 8	3450 H 12	6353 D 17	9086 G 2	9201 F 3	9506 K 5
1161 L 5	1962 A 5	3018 C 12	3451 J 10	6354 D 18	9087 D 6	9202 D 3	9507 E 11
1162 L 5	1969 J 16	3021 J 10	3452 H 12	6355 G 17	9089 B 9	9203 D 3	9509 E 10
1163 L 5	1975 I 1	3022 J 10	3453 K 6	6356 G 16	9090 B 12	9204 B 5	9510 G 10
1164 L 5	2005 D 10	3023 D 8	3454 K 6	6357 G 17	9091 C 12	9205 E 10	9511 E 11
1165 L 6	2010 E 10	3025 D 7	3455 I 13	6358 G 16	9092 C 9	9206 E 7	9512 F 10
1169 L 12	2012 D 10	3027 C 8	3457 I 9	6359 G 18	9093 G 7	9207 D 6	9513 E 11
1170 L 12	2014 D 10	3030 D 11	3459 E 14	6360 C 18	9094 F 4	9208 D 6	9514 F 10
1171 L 13	2017 E 10	3031 D 11	3460 J 11	6371 G 17	9095 H 3	9209 G 7	9515 F 10
1176 L 13	2019 E 9	3045 D 11	3463 J 12	6372 J 18	9096 I 4	9210 E 7	9516 F 10
1177 L 13	2020 E 9	3046 C 12	3464 G 14	6460 G 11	9097 C 3	9211 D 6	9517 F 10
1178 L 13	2021 E 9	3048 J 12	3466 I 13	6500 C 2	9098 A 10	9212 A 6	9518 F 10
1179 L 13	2025 F 9	3050 D 11	3469 E 14	6501 B 2	9099 A 11	9213 I 10	9519 G 8
1180 L 13	2032 E 9	3052 F 9	3470 F 12	6502 B 3	9100 K 11	9214 G 12	9520 F 10
1181 L 14	2039 E 8	3087 I 12	3471 H 12	6509 C 2	9101 K 10	9215 F 13	9521 G 10
1182 L 14	2041 F 9	3100 H 4	3472 J 6	6510 B 2	9102 K 10	9216 I 14	9522 G 10
1183 L 14	2043 F 9	3102 H 5	3473 J 6	6511 B 3	9103 J 9	9217 E 12	9530 L 6
1184 L 14	2044 C 10	3103 G 5	3474 F 12	6516 A 5	9104 K 11	9218 I 3	9801 I 9
1185 L 14	2049 C 8	3104 G 5	3475 F 12	6601 B 8	9105 L 7	9219 H 7	9950 J 3
1186 L 14	2054 F 9	3105 G 5	3476 H 12	7110 H 5	9106 F 12	9220 C 4	9951 J 3
1187 L 14	2059 B 9	3106 G 5	3477 J 13	7202 L 9	9107 G 13	9221 D 12	9952 J 3
1188 L 15	2086 C 7	3107 G 4	3479 J 6	7203 L 12	9108 G 13	9222 F 7	9953 J 3
1189 L 15	2152 C 6	3109 G 4	3480 K 13	7300 A 13	9109 G 13	9223 K 6	9954 K 3
1190 L 15	2211 L 7	3110 H 5	3481 H 13	7350 E 18	9110 K 11	9224 H 9	9955 K 3
1192 L 15	2220 L 11	3111 H 6	3482 H 14	7351 E 16	9111 K 10	9225 F 7	9956 K 3
1193 L 15	2297 K 7	3115 I 6	3483 J 11	7352 F 16	9112 H 8	9226 G 6	9957 K 3
1197 L 12	2300 A 12	3117 H 7	3484 F 12	7354 D 17	9113 C 12	9227 F 5	9995 I 18
1198 L 13	2301 A 13	3118 I 6	3489 F 13	7358 G 16	9114 I 10	9228 B 5	9996 I 17
1199 L 13	2302 A 12	3120 H 6	3490 F 13	7420 H 16	9115 C 14	9229 D 3	9997 I 17
1201 L 13	2318 B 13	3123 H 6	3491 F 12	7440 A 14	9116 G 14	9230 D 3	9998 J 17
1202 L 13	2356 D 16	3124 I 6	3499 H 11	7460 F 12	9117 B 13	9231 C 3	
1203 L 13	2357 E 17	3159 H 6	3513 D 3	7461 F 4	9118 G 11	9232 D 4	
1204 L 13	2360 B 17	3160 A 11	3514 B 4	7462 F 15	9119 F 14	9233 D 5	
1205 L 14	2361 E 17	3228 L 11	3517 B 4	7463 G 11	9120 G 13	9234 D 5	
1206 L 14	2362 D 18	3231 K 6	3521 B 3	7464 H 12	9121 G 13	9235 G 6	
1207 L 14	2363 G 17	3233 K 5	3528 C 8	7465 I 7	9122 H 13	9236 D 4	
1208 L 14	2364 G 16	3234 L 7	3537 D 4	7466 G 12	9123 G 13	9237 K 9	
1209 L 14	2365 H 17	3235 K 8	3538 B 3	7507 C 2	9124 J 8	9238 I 7	
1210 L 14	2366 D 18	3238 J 7	3539 B 4	7540 K 5	9125 I 7	9241 D 6	
1211 L 14	2367 G 16	3240 K 14	3545 I 15	7604 B 8	9126 E 3	9242 D 11	
1212 L 15	2368 G 17	3244 J 17	3546 G 15	7800 J 8	9127 J 9	9243 I 9	
1213 L 15	2370 H 16	3251 L 10	3570 I 10	7890 K 6	9128 E 4	9244 F 4	
1214 L 15	2371 H 18	3252 L 11	3600 B 9	9000 B 1	9129 E 11	9245 J 15	
1215 L 15	2373 D 15	3253 L 11	3604 B 9	9004 K 10	9130 F 14	9246 I 2	
1219 L 15	2374 H 18	3254 L 11	3606 A 9	9005 H 1	9131 L 6	9247 G 4	
1220 L 16	2375 D 18	3265 K 13	3618 A 9	9006 I 8	9132 I 12	9248 F 3	

Make sure that the components in these areas are aligned correctly !!! (Danger of collision with deck)



Power Supply (PS)


7354
MC44603P
(Power-Supply-Controller)
DEMAGNETICATION MANAGEMENT
REFERENCE BLOCK
SUPPLY & INITIALIZATION BLOCK
UVLO1
OSCILLATOR
BUFFER
STANDBY (REDUCED FREQUENCY)
THERMAL SHUTDOWN
OVERVOLTAGE MANAGEMENT
OVERVOLTAGE PROTECTION
ERROR AMP
CURRENT SENSE
FOLDBACK
Dmax & SOFT-START CONTROL
FOLDBACK INPUT
CURRENT SENSE INPUT
Soft Start & Dmax
7350
STP3NA60FI
(Switching-Transistor)
7351
SOC1012T
(Optocoupler)
7352
TL431CZ
(REF-Regulator)
5VASW Adj.
7358
BD438
7359
BC847B
(Buffer)
(9/14VM2-SWITCH)
(12V-Regulator)
7420
L78M12CV ; L4931CV120 for Stereo
7357
STD17N06
(SWITCH)
7353
STD17N06
(SWITCH)
not <6W Stby
6360
DF06M
5352
UF1922V4
5353
220-240V 50/60 Hz
1353
T1,25A
0075
GND
for Stereo
for Mono
T500mA
T1A
T100mA
GNDD

* ... DISCHARGE POS.2362 BEFOR REPAIRING!!!

HOT CIRCUIT , BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING

DO NOT OPERATE WITHOUT CASE

CAUTION : LETHAL POTENTIALS AT PRIMARY

OSCILLOGRAMS

...V MEASURED IN PLAYBACK MODE

...V MEASURED IN RECORD MODE

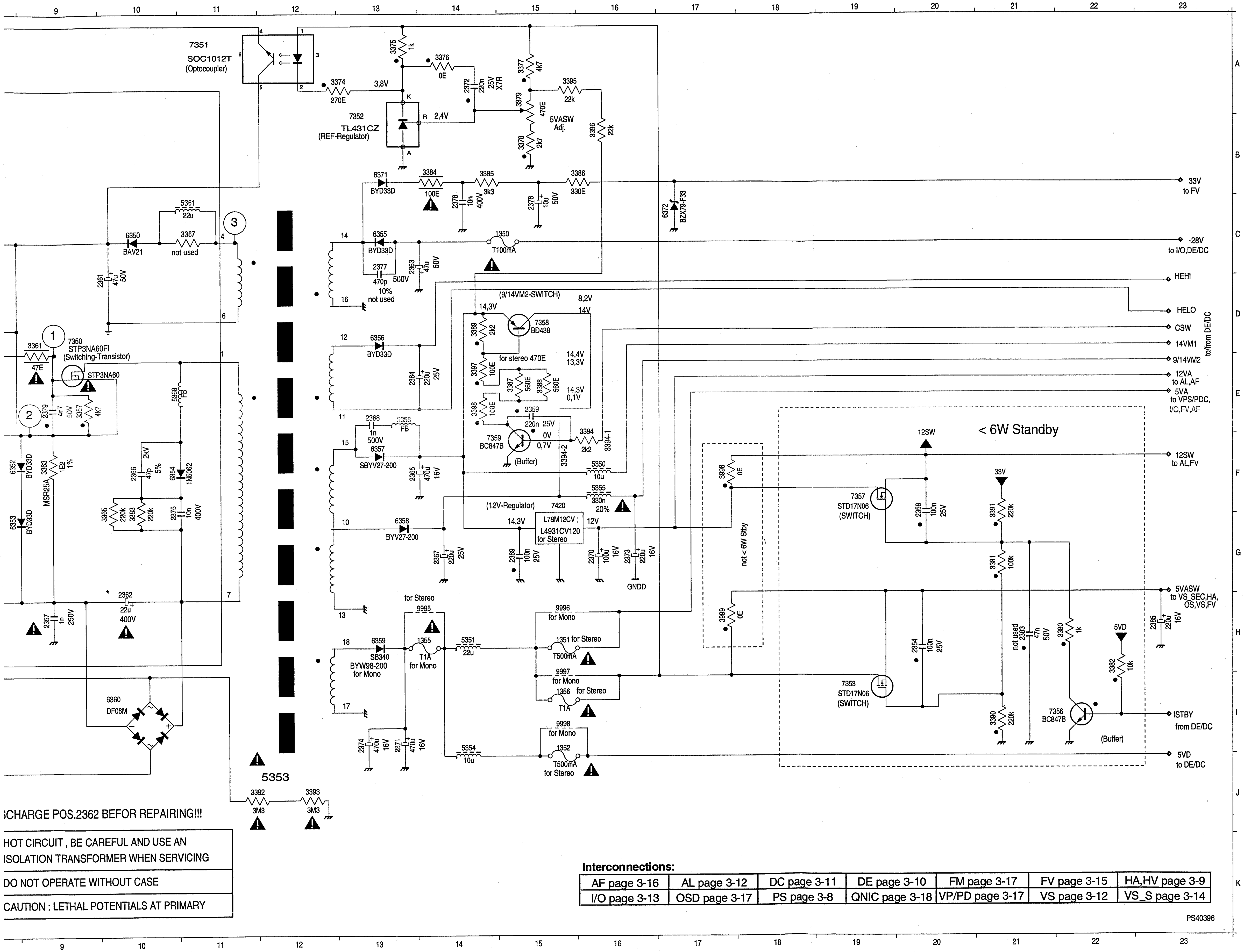
chip components

COLD GND

HOT GND

Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-1


7351
SOC1012T
(Optocoupler)
3374
270E
3,8V
3375
1k
3376
0E
2372
220n
25V
X7R
7352
TL431CZ
(REF-Regulator)
2,4V
3377
4k7
3379
470E
5VASW
Adj.
3378
2k7
3395
22k
3396
22k
6371
BYD33D
3384
100E
3385
3k3
2378
10n
400V
2376
10u
50V
3386
330E
6372
BZX79-F33
33V
to FV
5361
22u
6350
BAV21
3367
not used
2361
47u
50V
6355
BYD33D
2377
470p
500V
10%
not used
2363
47u
50V
1350
T100mA
-28V
to I/O,DE/DC
HEHI
HELO
(9/14VM2-SWITCH)
8,2V
14V
14,3V
3389
2k2
7358
BD438
CSW
14VM1
9/14VM2
to/from DE/DC
12VA
to AL,AF
5VA
to VPS/PDC,
I/O,FV,AF
3361
47E
7350
STP3NA60FI
(Switching-Transistor)
STP3NA60
6356
BYD33D
2364
220u
25V
for stereo 470E
14,4V
13,3V
3397
100E
3387
560E
3388
560E
14,3V
0,1V
2368
1n
500V
5358
FB
6357
SBYV27-200
2365
470u
16V
3398
100E
2359
220n 25V
0V
0,7V
7359
BC847B
(Buffer)
3394
2k2
3394-1
3394-2
5350
10u
5355
330n
20%
12SW
to AL,FV
2379
4n7
50V
3357
4k7
5368
FB
6352
BYD33D
3363
1E2
1%
MSR25A
2366
47p
5%
2kV
6354
1N5062
3365
220k
3383
220k
2375
10n
400V
6353
BYD33D
(12V-Regulator)
7420
14,3V
L78M12CV ;
L4931CV120
for Stereo
12V
6358
BYV27-200
2367
220u
25V
2369
100n
25V
2370
100u
16V
2373
220u
16V
GNDD
< 6W Standby
12SW
3998
0E
not < 6W Stby
7357
STD17N06
(SWITCH)
2358
100n
25V
33V
3391
220k
3381
100k
5VASW
to VS_SEC,HA,
OS,VS,FV
2362
22u
400V
2357
1n
250V
for Stereo
9995
6359
SB340
BYW98-200
for Mono
1355
T1A
for Mono
5351
22u
9996
for Mono
1351 for Stereo
T500mA
9997
for Mono
1356
T1A
for Stereo
3999
0E
2354
100n
25V
7353
STD17N06
(SWITCH)
not used
2383
47n
50V
3380
1k
5VD
2385
220u
16V
3382
10k
3390
220k
7356
BC847B
(Buffer)
ISTBY
from DE/DC
6360
DF06M
9998
for Mono
2374
470u
16V
2371
470u
16V
5354
10u
1352
T500mA
for Stereo
5VD
to DE/DC
5353
3392
3M3
3393
3M3
PS40396
9
10
11
12
13
14
15
16
17
18
19
20
21
22
23
A
B
C
D
E
F
G
H
I
J
K

SCHARGE POS.2362 BEFOR REPAIRING!!!

HOT CIRCUIT , BE CAREFUL AND USE AN ISOLATION TRANSFORMER WHEN SERVICING

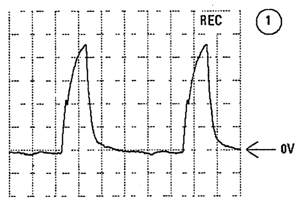
DO NOT OPERATE WITHOUT CASE

CAUTION : LETHAL POTENTIALS AT PRIMARY

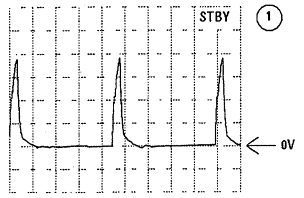
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

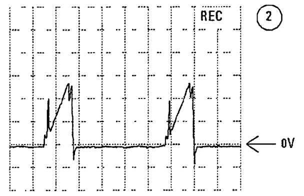
0075	H 1
1350	C15
1351	H15
1352	I15
1353	J 5
1355	H14
1356	I15
1370	J 7
2350	D 2
2352	F 2
2353	G 2
2354	H20
2355	G 5
2356	G 6
2357	H 9
2358	F20
2359	E15
2360	I 6
2361	D10
2362	H10
2363	C13
2364	E13
2365	F13
2366	F10
2367	G14
2368	E13
2369	G15
2370	G16
2371	I13
2372	A14
2373	G16
2374	I13
2375	F10
2376	C15
2377	C13
2378	C14
2379	E 9
2380	E 8
2381	C 7
2383	H21
2385	H23
2386	E 2
3350	C 4
3351	E 2
3352	E 2
3353	F 2
3354	G 2
3355	G 3
3356	F 2
3357	E 9
3358	G 4
3359	G 5
3360	D 8
3361	D 9
3362	G 4
3363	F 9
3365	F10
3367	C11
3369	J 7
3370	J 7
3373	J 7
3374	A13
3375	A13
3376	A14
3377	A15
3378	B15
3379	A15
3380	H22
3381	G21
3382	H22
3383	F10
3384	B14
3385	B14
3386	B16
3387	E15
3388	E15
3389	D14
3390	I21
3391	F21
3392	J11
3393	J12
3394	E16
3395	A15
3396	B16
3397	E14
3398	E14
3998	F17
3999	H17
5350	F16
5351	H14
5352	I 8
5353	J12
5354	I14
5355	F16
5358	E13
5361	C11
5368	E10
6350	C10
6351	E 8
6352	F 8
6353	G 8
6354	F10
6355	C13
6356	D13
6357	F13
6358	G13
6359	H13
6360	I10
6371	B13
6372	C17
7350	D 9
7351	A11
7352	B13
7353	I19
7354	C 5
7356	I22
7357	F19
7358	D15
7359	F15
7420	F15
9995	H14
9996	H15
9997	I15
9998	I15



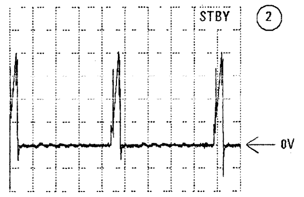
A: DC, 2 V/Div, 2us/Div
T 7350 Gate



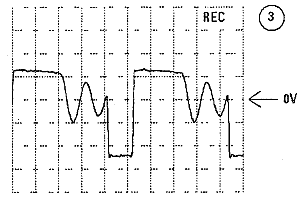
A: DC, 2 V/Div, 5us/Div
T 7350 Gate



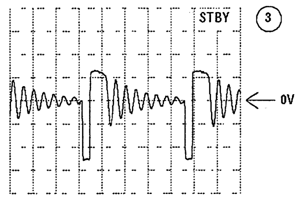
A: DC, 200mV/Div, 2us/Div
T 7350 Source



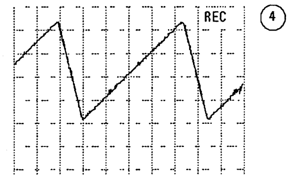
A: DC, 100mV/Div, 5us/Div
T 7350 Source



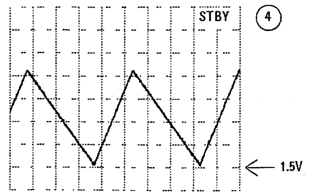
A: DC, 10 V/Div, 2us/Div
5353 Pin 4



A: DC, 10V/Div, 5us/Div
5353 Pin 4

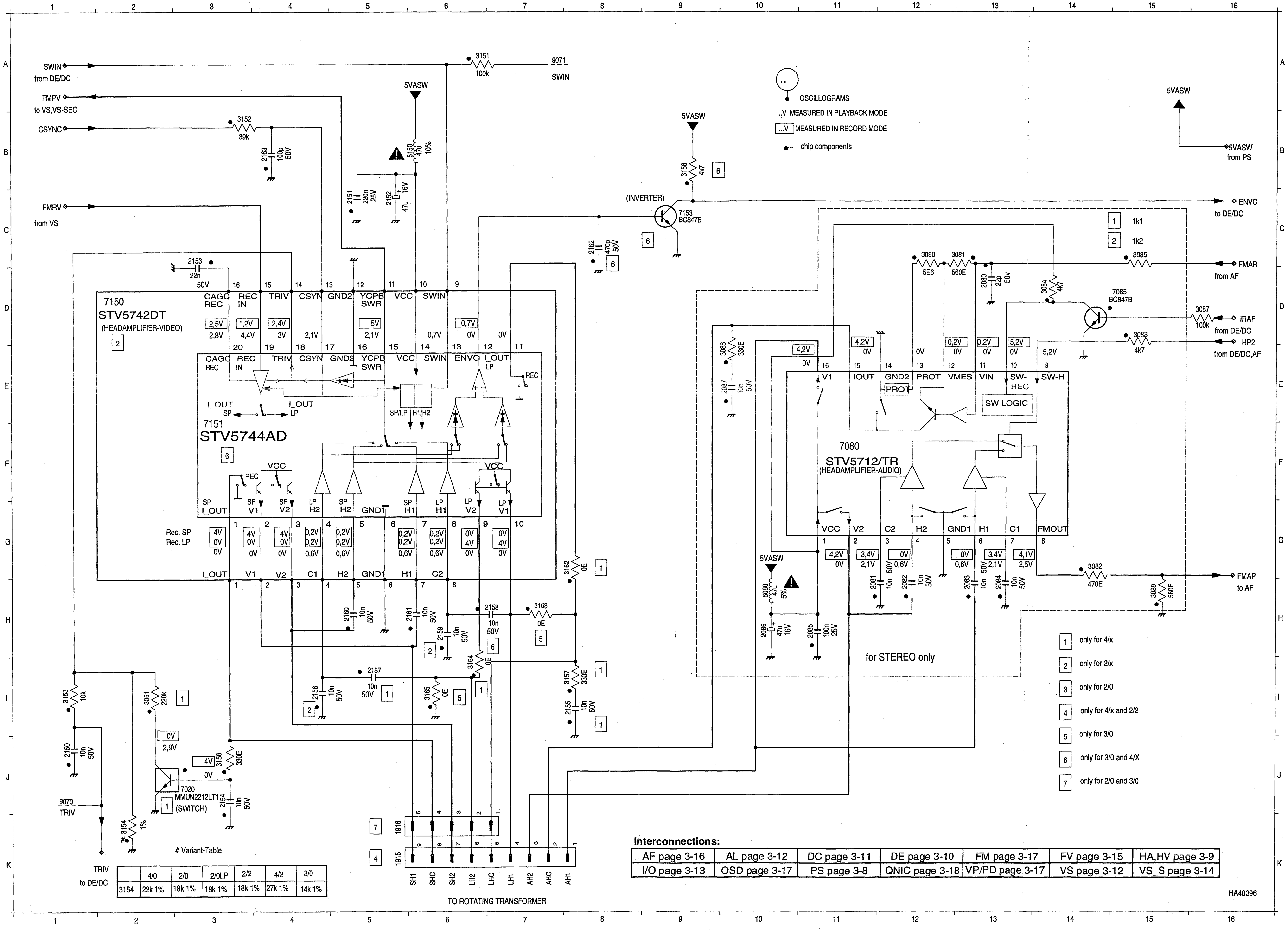


A: DC, 500mV/Div, 2us/Div
IC 7354 Pin 10



A: AC, 500mV/Div, 5us/Div
IC 7354 Pin 10

Head Amplifier (HA)


SWIN from DE/DC
FMPV to VS,VS-SEC
CSYNC
FMRV from VS
3151 100k
9071 SWIN
3152 39k
2163 100p 50V
5VASW
5150 47u 10%
2151 220n 25V
2152 47u 16V
2153 22n 50V
2162 470p 50V
(INVERTER)
7153 BC847B
3158 4k7
OSCILLOGRAMS
...V MEASURED IN PLAYBACK MODE
...V MEASURED IN RECORD MODE
chip components
5VASW from PS
ENVC to DE/DC
7150 STV5742DT (HEADAMPLIFIER-VIDEO)
7151 STV5744AD
CAGC REC, REC IN, TRIV, CSYN, GND2, YCPB SWR, VCC, SWIN, ENVC, I_OUT LP
I_OUT SP, I_OUT LP
SP/LP, H1/H2
SP I_OUT, SP V1, SP V2, LP H2, SP H2, GND1, SP H1, LP H1, LP V2, LP V1
Rec. SP, Rec. LP
I_OUT, V1, V2, C1, H2, GND1, H1, C2
2160 10n 50V
2161 10n 50V
2159 10n 50V
2158 10n 50V
3163 0E
3162 0E
3164 0E
3165 0E
2157 10n 50V
2156 10n 50V
3157 330E
2155 10n 50V
3153 10k
3051 220k
2150 10n 50V
3156 330E
7020 MMUN2212LT1 (SWITCH)
2154 10n 50V
9070 TRIV
3154 1%
# Variant-Table
TRIV to DE/DC
1916
1915
SH1, SHC, SH2, LH2, LHC, LH1, AH2, AHC, AH1
TO ROTATING TRANSFORMER
3080 5E6
3081 560E
2080 22p 50V
3085
3084 4k7
7085 BC847B
FMAR from AF
3087 100k
IRAF from DE/DC
3083 4k7
HP2 from DE/DC,AF
3086 330E
2087 10n 50V
7080 STV5712/TR (HEADAMPLIFIER-AUDIO)
V1, IOUT, GND2, PROT, VMES, VIN, SW-REC, SW-H
PROT
SW LOGIC
VCC, V2, C2, H2, GND1, H1, C1, FMOUT
5080 47u 5%
2086 47u 16V
2085 100n 25V
2081 10n 50V
2082 10n 50V
2083 10n 50V
2084 10n 50V
3082 470E
3089 560E
FMAP to AF
for STEREO only
1 1k1
2 1k2
HA40396

	4/0	2/0	2/0LP	2/2	4/2	3/0
3154	22k 1%	18k 1%	18k 1%	18k 1%	27k 1%	14k 1%

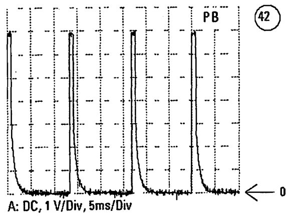
1 only for 4/x
2 only for 2/x
3 only for 2/0
4 only for 4/x and 2/2
5 only for 3/0
6 only for 3/0 and 4/X
7 only for 2/0 and 3/0

Interconnections:

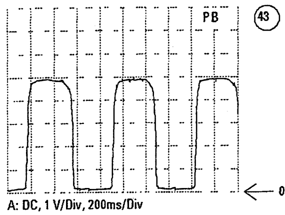
AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

1915	K 5
1916	K 5
2080	D13
2081	H11
2082	H12
2083	H13
2084	H13
2085	H11
2086	H10
2087	E10
2150	J 1
2151	C 5
2152	C 5
2153	C 3
2154	J 3
2155	I 8
2156	I 4
2157	I 5
2158	H 7
2159	H 6
2160	H 5
2161	H 6
2162	C 8
2163	B 4
3051	I 2
3080	C12
3081	C13
3082	G14
3083	D15
3084	D14
3085	C15
3086	E10
3087	D16
3089	H15
3151	A 6
3152	B 3
3153	I 1
3154	K 2
3156	J 3
3157	I 8
3158	B 9
3162	G 8
3163	H 7
3164	I 6
3165	I 6
5080	H10
5150	B 6
7020	J 3
7080	F11
7085	D15
7150	D 2
7151	F 3
7153	C 9
9070	J 1
9071	A 7

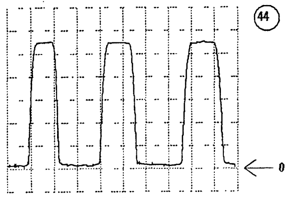
Deck Electronics (DE)



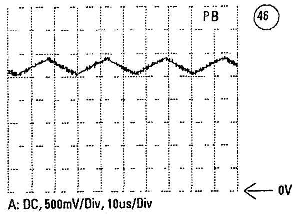
A: DC, 1 V/Div, 5ms/Div
T 7463 Emitter



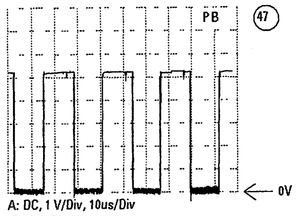
A: DC, 1 V/Div, 200ms/Div
IC 7460 Pin 6, 7



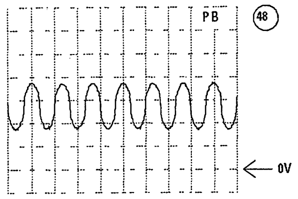
A: DC, 1 V/Div, 10ms/Div
7466



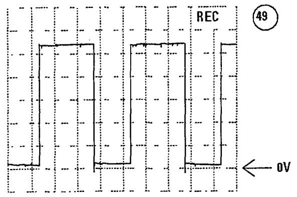
A: DC, 500mV/Div, 10us/Div
Connector 1930 Pin 6



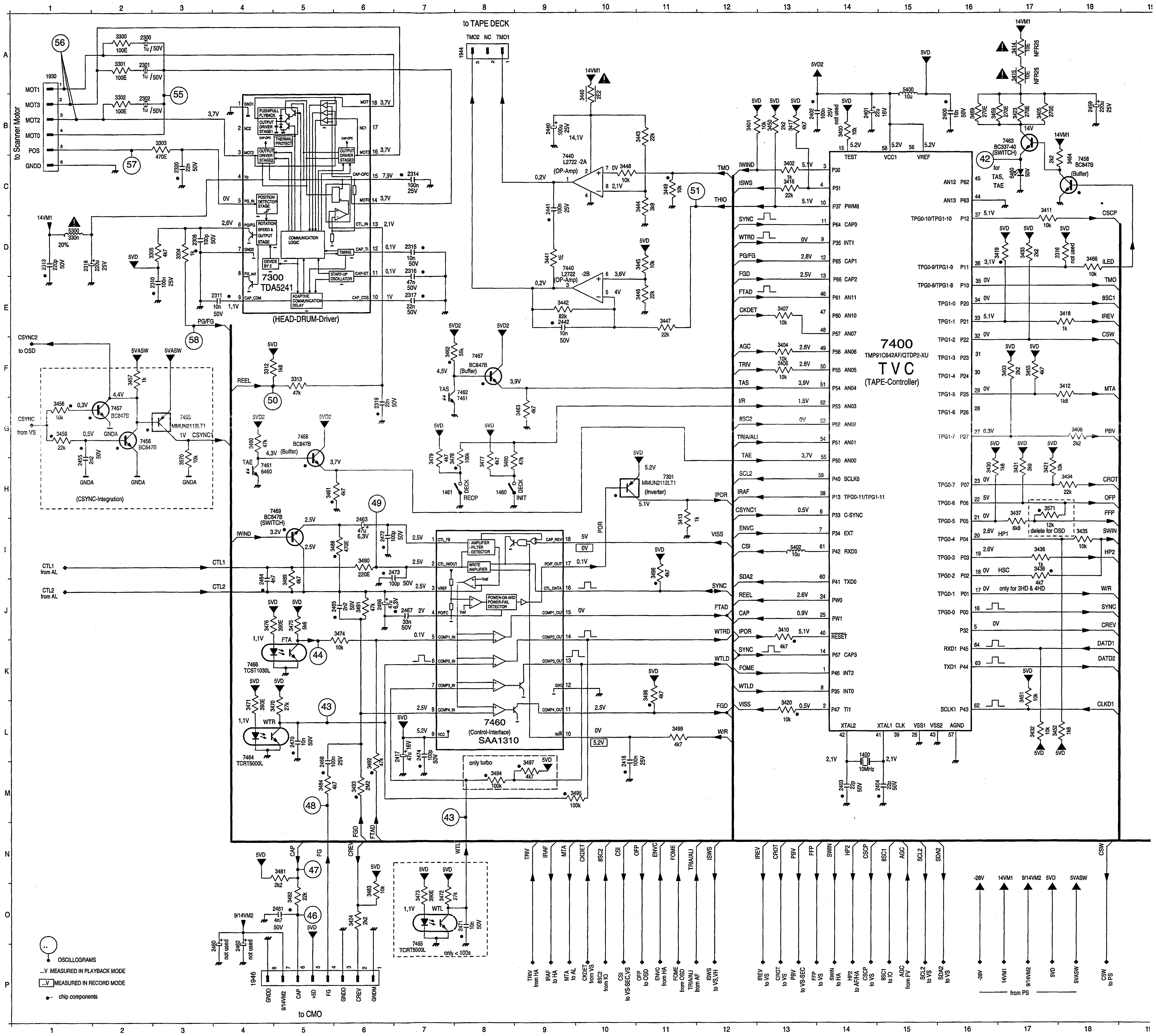
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 25



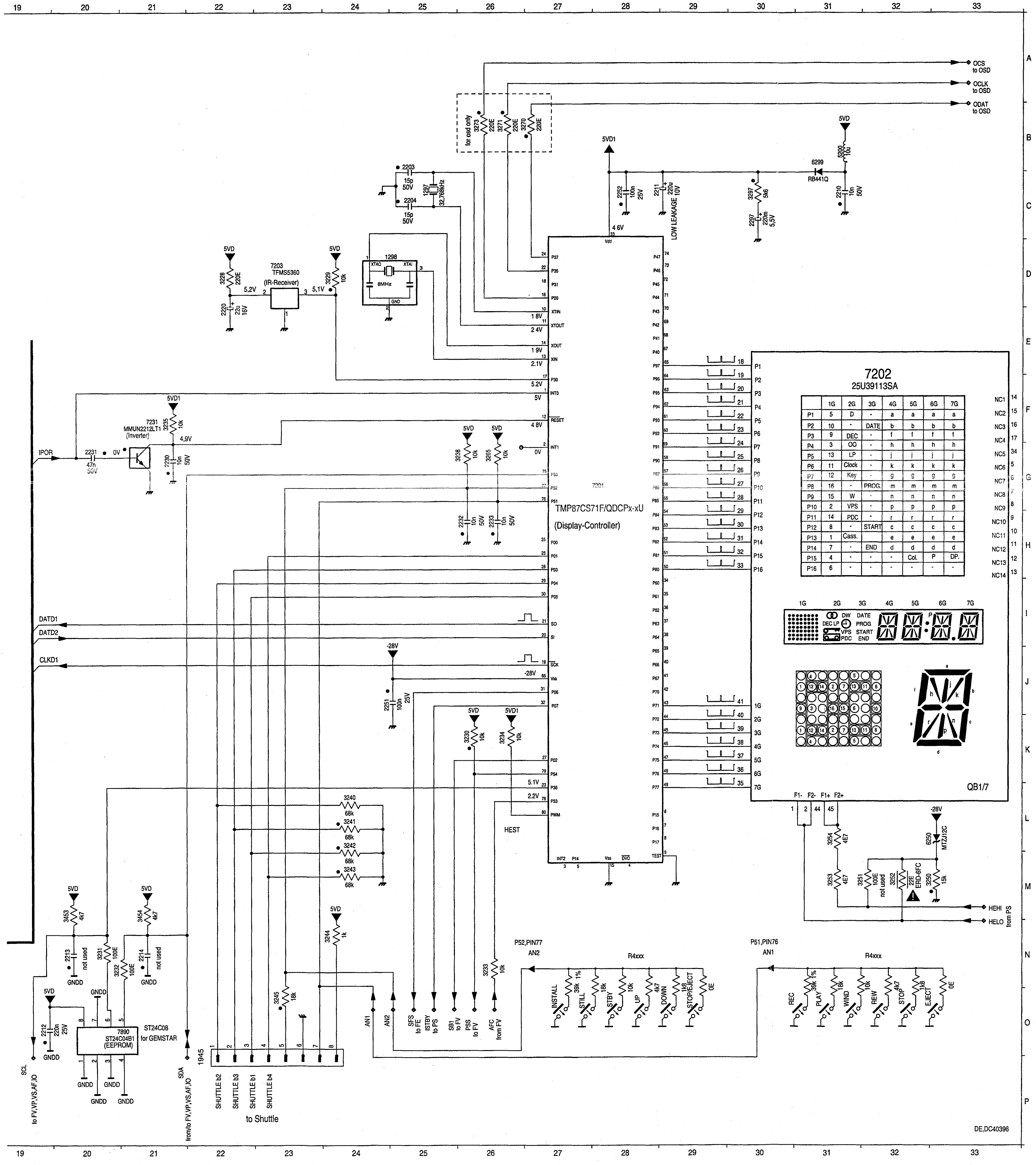
A: DC, 1 V/Div, 1ms/Div
Connector 1946 Pin 4



A: DC, 1 V/Div, 10ms/Div
IC 7460 Pin 2


to TAPE DECK
TMO2 NC TMO1
1944
to Scanner Motor
1930
MOT1
MOT3
MOT2
MOTO
POS
GNDD
7300
TDA5241
(HEAD-DRUM-Driver)
7400
TMP91C642AF/QTDP2-XU
TVC
(TAPE-Controller)
7460
(Control-Interface)
SAA1310
(CSYNC-Integration)
CSYNC2
to OSD
CSYNC
from VS
CTL1
from AL
CTL2
from AL
7440
L2722 -2A
(OP-Amp)
7457 BC847B
7455 MMUN2112LT1
7456 BC847B
7467 BC847B (Buffer)
7468 BC847B (Buffer)
7469 BC847B (SWITCH)
7301 MMUN2112LT1 (Inverter)
7463 BC337-40 (SWITCH)
7458 BC847B (Buffer)
7466 TCST1030L
7464 TCRT5000L
7465 TCRT5000L
only <100s
only turbo
delete for OSD
1400 10MHz
1461 RECP
1460 INIT
1946
to CMO
from PS
OSCILLOGRAMS
...V MEASURED IN PLAYBACK MODE
...V MEASURED IN RECORD MODE
chip components

Display Control (DC)


19
20
21
22
23
24
25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
OCS to OSD
OCLK to OSD
ODAT to OSD
for osd only
3273 220E
3271 220E
3270 220E
5VD1
2203 15p 50V
2204 15p 50V
1297 32,768kHz
2252 100n 25V
2211 220u 10V
LOW LEAKAGE
4 6V
Vdd
3297 5k6
2297 220n 5,5V
6299 RB441Q
5VD
5200 10U
2210 10n 50V
5VD
3228 220E
2220 22u 16V
7203 TFMS5360 (IR-Receiver)
5,2V
5,1V
3229 10k
1298
XTAO
XTAI
8MHz
GND
P37
P35
P31
P20
XTIN
XTOUT
XOUT
XIN
P30
INT0
RESET
INT1
1 8V
2 4V
1 9V
2.1V
5.2V
5V
4 8V
0V
IPOR
2231 47n 50V
7231 MMUN2212LT1 (Inverter)
3235 10k
4,9V
2230 10n 50V
3238 10k
3265 10k
2232 10n 50V
2233 10n 50V
7201
TMP87CS71F/QDCPx-xU
(Display-Controller)
DATD1
DATD2
CLKD1
-28V
2251 100n 25V
3230 10k
3234 10k
5.1V
2.2V
P02
P54
P36
P53
PWM
HEST
INT2
P14
Vss
DVO
TEST
3240 68k
3241 68k
3242 68k
3243 68k
3453 4k7
3454 4k7
2213 not used
2214 not used
3231 100E
3232 100E
GNDD
2212 220n 25V
7890 ST24C04B1 (EEPROM)
ST24C08 for GEMSTAR
SCL to FV,VP,VS,AF,IO
SDA from/to FV,VP,VS,AF,IO
1945
SHUTTLE b2
SHUTTLE b3
SHUTTLE b1
SHUTTLE b4
to Shuttle
3245 18k
3244 1k
AN1
AN2
SFS to FE
ISTBY to PS
SB1 to FV
PSS to FV
AFC from FV
3233 10k
P52,PIN77 AN2
R4xxx
INSTALL 39k 1%
STILL 18k
STBY 10k
UP 4k7
DOWN 1k8
STOP/EJECT 0E
P51,PIN76 AN1
REC 39k 1%
PLAY 18k
WIND 10k
REW 4k7
STOP 1k8
EJECT 0E
1G
2G
3G
4G
5G
6G
7G
NC1
NC14
QB1/7
F1- F2- F1+ F2+
3254 4E7
3253 4E7
3251 100E
3252 not used
3255 ERD-6FC
3250 10k
6250 MTZJ12C
HEHI
HELO
from PS
DE,DC40396

7202
25U39113SA

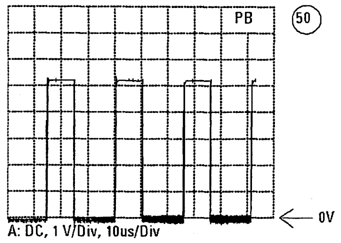
	1G	2G	3G	4G	5G	6G	7G
P1	5	D	-	a	a	a	a
P2	10	-	DATE	b	b	b	b
P3	9	DEC	-	f	f	f	f
P4	3	OO	-	h	h	h	h
P5	13	LP	-	j	j	j	j
P6	11	Clock	-	k	k	k	k
P7	12	Key	-	g	g	g	g
P8	16	-	PROG.	m	m	m	m
P9	15	W	-	n	n	n	n
P10	2	VPS	-	p	p	p	p
P11	14	PDC	-	r	r	r	r
P12	8	-	START	c	c	c	c
P13	1	Cass.		e	e	e	e
P14	7	-	END	d	d	d	d
P15	4	-	-	-	Col.	P	DP.
P16	6	-	-	-	-	-	-

1297	C25
1298	D25
1400	L14
1460	H 8
1461	H 8
1930	A 1
1944	A 8
1945	O22
1946	P 4
2203	B25
2204	C25
2210	C31
2211	C29
2212	O20
2213	N20
2214	N21
2220	D22
2230	G21
2231	G20
2232	H26
2233	H26
2251	J25
2252	C28
2297	C30
2300	A 3
2301	A 3
2302	B 3
2308	D 3
2310	E 3
2311	E 4
2313	D 1
2314	C 7
2315	D 7
2316	D 7
2317	E 7
2318	D 2
2319	G 6
2320	C 3
2400	B16
2401	B15
2402	B14
2403	M14
2404	M15
2416	L11
2417	L 7
2440	B 9
2441	C 9
2442	E10
2455	G 2
2459	B18
2460	O 4
2461	O 5
2462	O 4
2463	H 6
2464	I 5
2465	J 6
2466	J 6
2467	J 7
2468	L 6
2470	L 5
2471	O 8
2472	I 7
2473	I 7
2474	L 7
3228	D22
3229	D24
3230	K26
3231	N20
3232	N21
3233	N26
3234	K26
3235	F21
3238	G26
3240	L24
3241	L24
3242	L24
3243	M24
3244	N24
3245	O23
3250	M33
3251	M32
3252	M32
3253	M31
3254	L31
3265	G26
3270	B27
3271	B26
3273	B26
3297	C30
3300	A 2
3301	A 2
3302	B 2
3303	B 3
3304	D 3
3305	D 3
3312	F 5
3313	F 5
3316	D18
3400	B14
3401	B13
3402	C13
3403	F17
3404	F13
3405	B17
3406	F13
3407	E13
3408	G18
3410	J13
3411	C17
3412	F18
3413	H11
3414	A17
3415	A17
3416	C13
3417	B13
3418	E18
3419	D17
3420	K13
3421	H18
3423	B17
3424	O 6
3430	H17
3431	H17
3432	L17
3433	D17
3434	H18
3435	I18
3436	I17
3437	H17
3438	I17
3440	A10
3441	D 9
3442	E 9
3443	B11
3444	C11
3445	D11
3446	E11
3447	E11
3448	C11
3449	C11
3450	B13
3451	K17
3452	L18
3453	M20
3454	M21
3455	F17
3456	G 1
3457	F 2
3458	G 1
3459	B17
3460	G 4
3461	H 6
3462	F 8
3463	G 9
3464	B18
3466	D18
3469	B16
3470	K 5
3471	K 4
3472	O 8
3473	O 7
3474	J 6
3475	J 5
3476	J 5
3477	G 8
3478	G 8
3479	G 7
3480	G 9
3481	N 5
3482	O 5
3483	O 6
3484	M 6
3488	I 6
3489	I 5
3490	I 6
3491	J 6
3492	L 6
3493	M 6
3494	M 8
3495	M10
3496	I11
3497	L 9
3498	K11
3499	L11
3570	G 3
3571	H18
5200	B31
5300	D 1
5400	A15
5402	I13
6250	L33
6299	B31
6460	C17
7201	G28
7202	E32
7203	D23
7231	F21
7300	D 5
7301	H11
7400	F15
7440	B10
7440	D10
7455	G 3
7456	G 2
7457	G 2
7458	B18
7460	L 8
7461	H 4
7462	F 8
7463	B17
7464	L 4
7465	O 7
7466	K 4
7467	F 8
7468	G 5
7469	H 5
7890	O21

Interconnections:

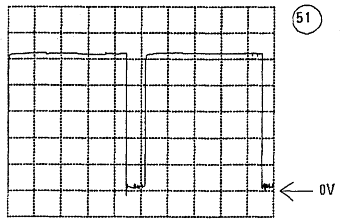
- AF page 3-16
- AL page 3-12
- DC page 3-11
- DE page 3-10
- FM page 3-17
- FV page 3-15
- HA,HV page 3-9
- I/O page 3-13
- OSD page 3-17
- PS page 3-8
- QNIC page 3-18
- VP/PD page 3-17
- VS page 3-12
- VS_S page 3-14

㊿



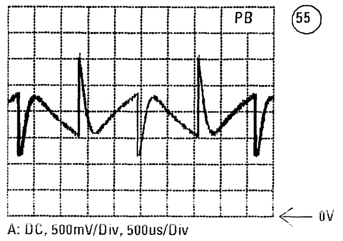
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 24

(51)



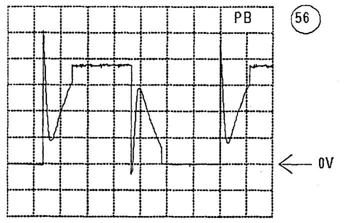
A: DC, 1 V/Div, 10us/Div
IC 7400 Pin 10

(55)



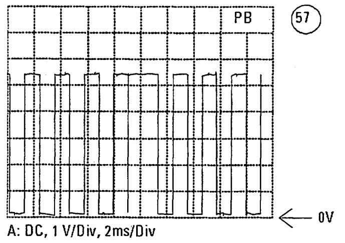
A: DC, 500mV/Div, 500us/Div
Connector 1930 Pin 4

(56)



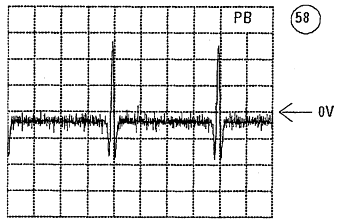
A: DC, 2 V/Div, 1ms/Div
Connector 1930 Pin 1, 2, 3

(57)



A: DC, 1 V/Div, 2ms/Div
IC 7400 Pin 12

(58)

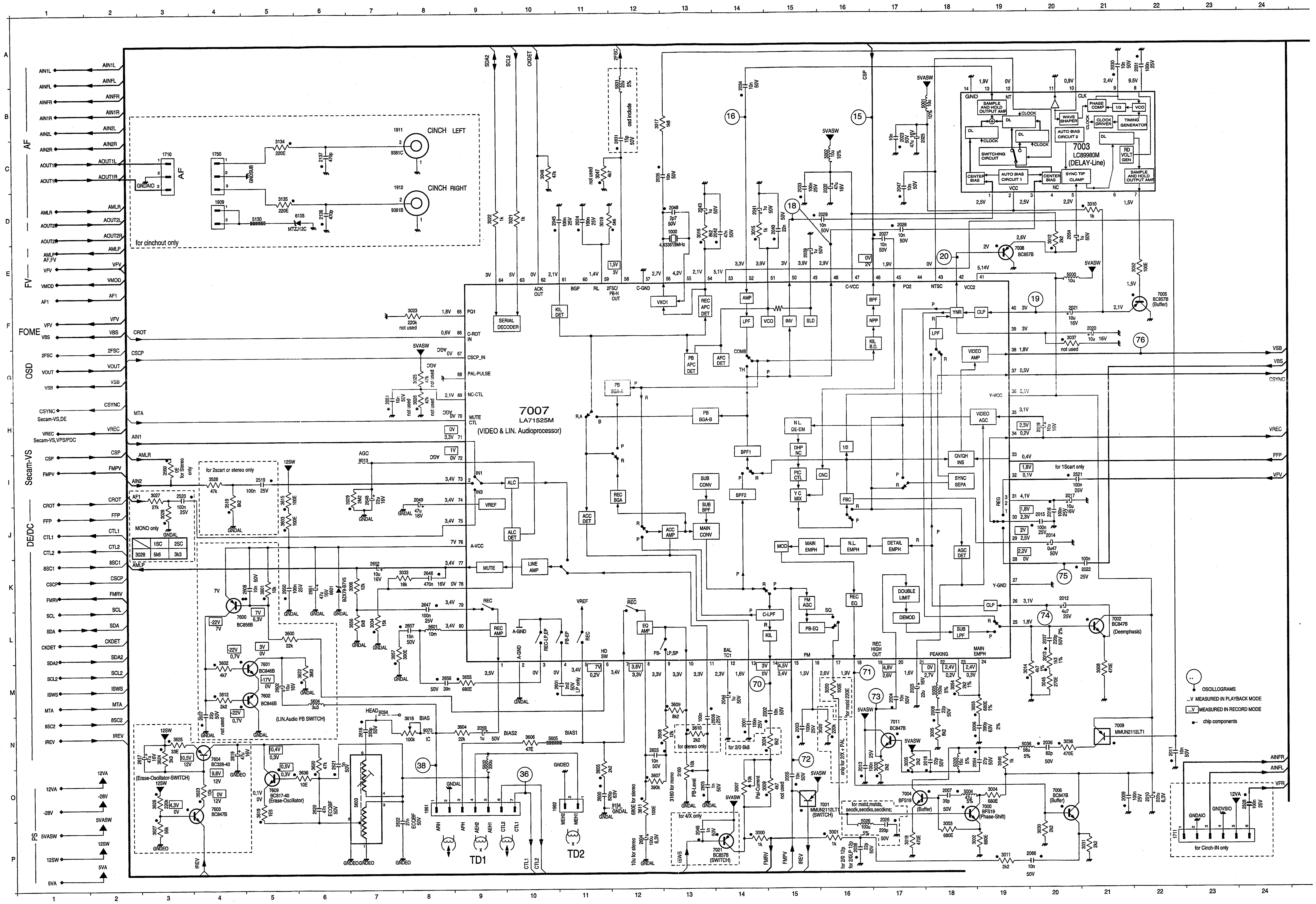


A: DC, 2 V/Div, 10ms/Div
Connector 1930 Pin 5

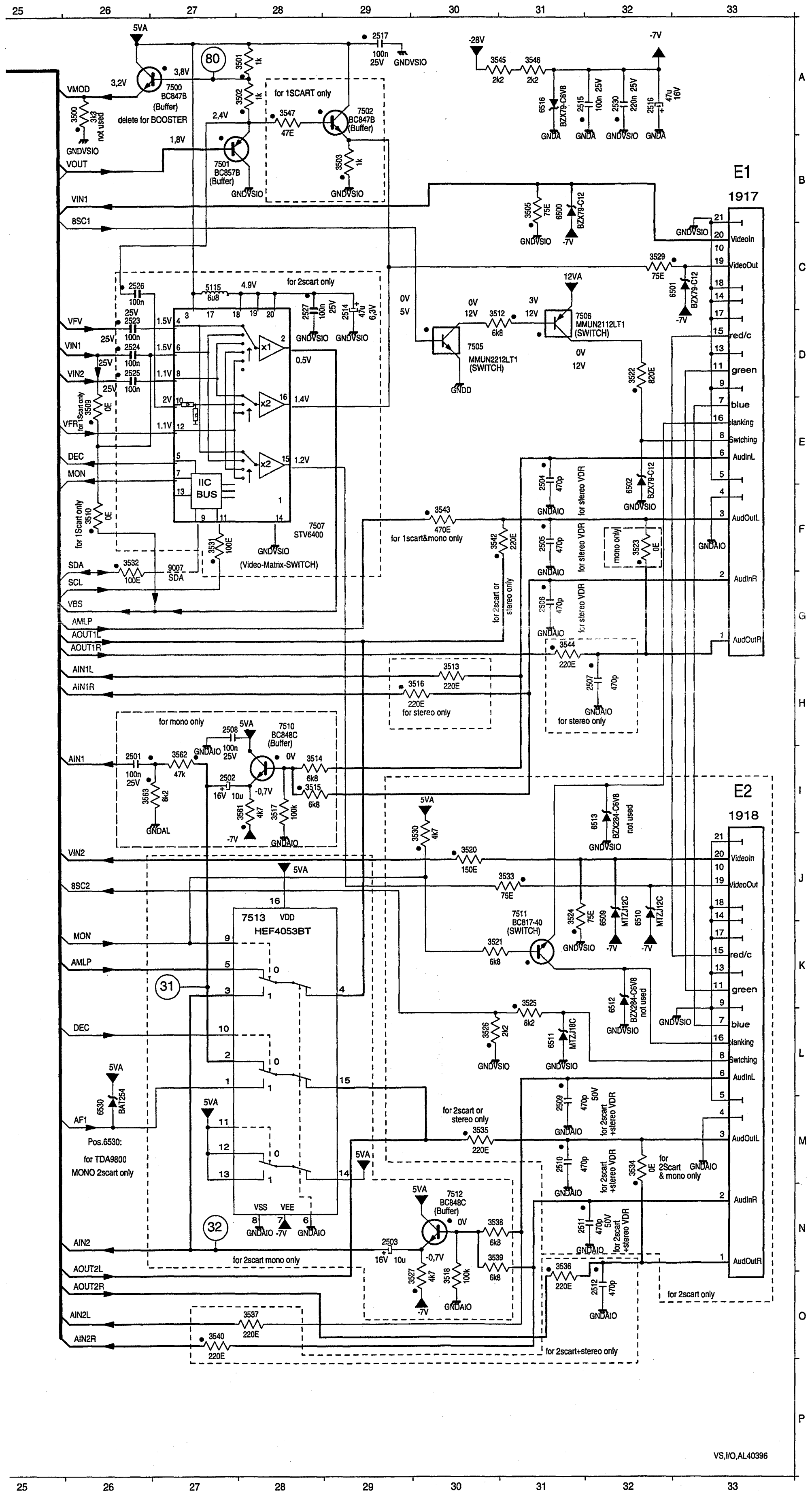
Keyfunction AN2	4xxx	Voltage pin77 P52
STOP/EJECT	0E	0V
DOWN	1k8	0.808V
UP	4k7	1.695V
STBY	10k	2.65V
STILL	18k	3.41V
INSTALL	39k	4.22V

Keyfunction AN1	4xxx	Voltage pin76 P51
EJECT	0E	0V
STOP	1k8	0.808V
REWIND	4k7	1.695V
WIND	10k	2.65V
PLAY	18k	3.41V
RECORD	39k	4.22V

Video Signal Processing (VS), Audio Linear (AL)


AF
FV
FOME
OSD
Secam-VS
DE/DC
PS
AIN1L
AINFL
AINFR
AIN1R
AIN2L
AIN2R
AOUT1L
AOUT1R
AMLR
AOUT2L
AOUT2R
AMLP
VFV
VMOD
AF1
VBS
2FSC
VOUT
VSB
CSYNC
Secam-VS,DE
VREC
Secam-VS,VPS/PDC
CSP
FMPV
CROT
FFP
CTL1
CTL2
8SC1
CSCP
FMRV
SCL
SDA
CKDET
SDA2
SCL2
ISWS
MTA
8SC2
IREV
12VA
-28V
5VASW
12SW
5VA
1710
1750
1909
1911
1912
CINCH LEFT
CINCH RIGHT
for cinchout only
7007
LA71525M
(VIDEO & LIN. Audioprocessor)
7003
LC89980M
(DELAY-Line)
SERIAL DECODER
KIL DET
VXO1
REC APC DET
AMP
LPF
VCO
INV
SLD
BPF
NPP
KIL B.D.
YNR
CLP
VIDEO AMP
VIDEO AGC
PB BGA-A
PB BGA-B
N L DE-EM
DHP NC
PIC CTL
Y C MIX
CNC
BPF1
BPF2
SUB CONV
SUB BPF
MAIN CONV
ACC AMP
REC BGA
ACC DET
QV/QH INS
SYNC SEPA
FBC
MOD
MAIN EMPH
N.L EMPH
DETAIL EMPH
AGC DET
DOUBLE LIMIT
DEMOD
SUB LPF
FM AGC
PB-EQ
C-LPF
KIL
REC EQ
EQ AMP
REC AMP
ALC
ALC DET
VREF
MUTE
LINE AMP
SAMPLE AND HOLD OUTPUT AMP
WAVE SHAPER
PHASE COMP
1/3
VCO
CLOCK DRIVER
TIMING GENERATOR
AUTO BIAS CIRCUIT 2
SWITCHING CIRCUIT
AUTO BIAS CIRCUIT 1
CENTER BIAS
SYNC TIP CLAMP
RD VOLT GEN
7008 BC857B
7005 BC857B (Buffer)
7002 BC847B (Deemphasis)
7009 MMUN2112LT1
7011 BC847B
7004 BFS19 (Buffer)
7000 BFS19 (Phase-Shift)
7006 BC847B (Buffer)
7001 MMUN2112LT1 (SWITCH)
7021 BC857B (SWITCH)
7600 BC856B
7601 BC846B
7602 BC846B
(LIN.Audio PB SWITCH)
7604 BC328-40
7603 BC847B
7609 BC817-40 (Erase-Oscillator)
(Erase-Oscillator-SWITCH)
for 2scart or stereo only
MONO only
for 1Scart only
for stereo only
for 4/X only
for 2/0 8k8
for Cinch-IN only
TD1
TD2
HEAD
BIAS
BIAS1
BIAS2
4,433619MHz
(16)
(15)
(18)
(20)
(19)
(76)
(75)
(74)
(70)
(71)
(73)
(72)
(38)
(36)
OSCILLOGRAMS
...V MEASURED IN PLAYBACK MODE
...V MEASURED IN RECORD MODE
chip components

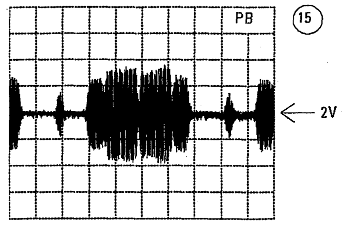
In/Out (I/O)


25
26
27
28
29
30
31
32
33
A
B
C
D
E
F
G
H
I
J
K
L
M
N
O
P
5VA
80
7500
BC847B
(Buffer)
delete for BOOSTER
3,2V
3,8V
2,4V
1,8V
VMOD
3500
3k3
not used
GNDVSIO
VOUT
3501
1k
3502
1k
7501
BC857B
(Buffer)
for 1SCART only
3547
47E
7502
BC847B
(Buffer)
3503
1k
2517
100n
25V
VIN1
8SC1
-28V
3545
2k2
3546
2k2
6516
BZX79-C6V8
2515
100n 25V
2530
220n 25V
2516
47u
16V
-7V
GNDA
3505
75E
6500
BZX79-C12
E1
1917
VideoIn
VideoOut
red/c
green
blue
blanking
Swtching
AudInL
AudOutL
AudInR
AudOutR
3529
75E
6501
BZX79-C12
12VA
3512
6k8
7505
MMUN2212LT1
(SWITCH)
7506
MMUN2112LT1
(SWITCH)
GNDD
3522
820E
6502
BZX79-C12
for 2scart only
2526
100n
5115
6u8
4.9V
2527
100n
25V
2514
47u
6,3V
VFV
2523
2524
2525
VIN2
VFR
for 1Scart only
3509
0E
DEC
MON
IIC
BUS
x1
x2
0.5V
1.4V
1.2V
7507
STV6400
(Video-Matrix-SWITCH)
3510
0E
3531
100E
SDA
SCL
3532
100E
9007
SDA
VBS
AMLP
AOUT1L
AOUT1R
AIN1L
AIN1R
3543
470E
for 1scart&mono only
3542
220E
for 2scart or stereo only
2504
470p
2505
470p
2506
470p
for stereo VDR
GNDAIO
mono only
3523
0E
3544
220E
2507
470p
for stereo only
3513
220E
3516
220E
for mono only
AIN1
2501
100n
25V
3563
8k2
GNDAL
3562
47k
2508
100n
25V
7510
BC848C
(Buffer)
0V
-0,7V
2502
16V
10u
3561
4k7
3517
100k
3514
6k8
3515
6k8
E2
1918
6513
BZX284-C6V8
not used
3530
4k7
3520
150E
3533
75E
8SC2
7513
VDD
HEF4053BT
VSS
VEE
31
32
7511
BC817-40
(SWITCH)
3521
6k8
3524
75E
6509
MTZJ12C
6510
MTZJ12C
3525
8k2
3526
2k2
6511
MTZJ18C
6512
BZX284-C6V8
not used
AF1
6530
BAT254
Pos.6530:
for TDA9800
MONO 2scart only
3535
220E
2509
470p
50V
2510
470p
for 2scart +stereo VDR
3534
0E
for 2Scart & mono only
7512
BC848C
(Buffer)
2503
16V
10u
3527
4k7
3518
100k
3538
6k8
3539
6k8
2511
470p
50V
3536
220E
2512
470p
for 2scart only
AIN2
for 2scart mono only
AOUT2L
AOUT2R
AIN2L
AIN2R
3537
220E
3540
220E
for 2scart+stereo only
VS,I/O,AL40396

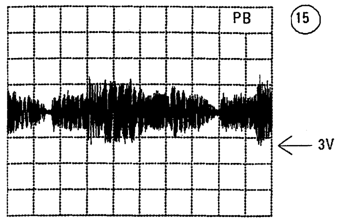
1000	D13	3022	D 9	7500	A27
1710	C 3	3023	F 8	7501	B27
1711	P22	3024	N14	7502	A29
1750	C 4	3025	G 8	7505	D30
1909	D 4	3026	G 8	7506	D31
1911	B 8	3027	I 3	7507	F29
1912	C 8	3028	J 3	7510	H28
1917	B33	3029	I 7	7511	J31
1918	I33	3030	P20	7512	N30
1961	O 8	3031	P21	7513	J28
1962	O10	3032	O17	7600	L 5
2001	N14	3033	K 8	7601	M 5
2002	M14	3034	L 7	7602	M 5
2003	N15	3035	N17	7603	O 4
2004	M17	3036	N20	7604	N 4
2005	M17	3037	F20	7609	O 5
2006	N18	3045	M20	9007	F27
2007	O18	3046	N19	9013	I 7
2008	M18	3047	C11	9034	M 7
2009	O21	3048	C10	9073	N 8
2010	O22	3050	M16	9154	O12
2011	N22	3052	E22		
2012	K20	3054	M18		
2013	O16	3055	M18		
2014	J20	3134	C 5		
2015	J20	3135	D 5		
2016	J20	3160	O13		
2017	I20	3500	A26		
2018	N18	3501	A28		
2019	H20	3502	A28		
2020	F21	3503	B29		
2021	F20	3505	B31		
2022	K21	3509	E26		
2023	C17	3510	F26		
2024	D11	3512	D30		
2025	C17	3513	H30		
2026	P17	3514	I28		
2027	D17	3515	I28		
2028	D17	3516	H30		
2029	D16	3517	I28		
2030	A21	3518	O30		
2031	A22	3519	I 4		
2032	C16	3520	J30		
2033	C15	3521	K30		
2034	B14	3522	D32		
2035	C12	3523	F32		
2036	N20	3524	J31		
2037	L20	3525	K31		
2038	P16	3526	L30		
2039	E15	3527	O30		
2040	D15	3528	I 4		
2041	D14	3529	C32		
2042	D14	3530	I30		
2043	D13	3531	F27		
2044	M14	3532	F26		
2045	D10	3533	J31		
2046	P13	3534	M32		
2047	C17	3535	M30		
2048	D13	3536	N31		
2049	I 8	3537	O28		
2051	G 7	3538	N30		
2054	D20	3539	N30		
2055	O15	3540	O27		
2059	N 9	3542	F30		
2064	N18	3543	F30		
2066	P20	3544	G31		
2137	C 6	3545	A31		
2138	D 6	3546	A31		
2501	I26	3547	A28		
2502	I27	3560	I 3		
2503	N29	3561	I28		
2504	E31	3562	I27		
2505	F31	3563	I26		
2506	G31	3600	L 5		
2507	H32	3601	K 5		
2508	H27	3602	M 4		
2509	M31	3603	J 5		
2510	M31	3604	N 9		
2511	N31	3605	O11		
2512	O32	3606	N10		
2514	C29	3607	O12		
2515	A31	3608	N12		
2516	A32	3609	M13		
2517	A29	3610	N13		
2519	I 5	3611	O12		
2520	I 3	3612	M 4		
2521	I20	3615	I 5		
2523	D26	3618	N 8		
2524	D26	3619	O 5		
2525	D26	3620	N 6		
2526	C26	3622	M 6		
2527	C28	3623	O 4		
2528	O24	3624	N 3		
2530	A32	3625	N 3		
2600	O11	3626	O 3		
2601	M10	3627	P 3		
2602	M 5	3638	O 6		
2603	N12	3655	M 9		
2604	P12	3656	L 7		
2605	O13	3657	L 7		
2606	N13	5000	E20		
2607	M 4	5001	B18		
2608	K 5	5002	C16		
2617	N 2	5004	O18		
2618	N 7	5005	M18		
2619	N 4	5020	N18		
2620	O 6	5026	P16		
2621	N 6	5036	N19		
2622	P 7	5115	C27		
2646	K 8	5130	D 5		
2647	K 8	5601	L 8		
2648	I 7	5602	N 9		
2650	K 5	5603	O 7		
2651	K 6	5604	M 6		
2652	K 7	5605	N10		
2656	M 8	5831	A12		
2657	L 8	6135	D 6		
2831	C12	6500	B31		
3000	P14	6501	C32		
3001	P16	6502	F32		
3002	P18	6509	J32		
3003	P18	6510	J32		
3004	O19	6511	L31		
3005	N18	6512	K32		
3006	K 7	6513	I32		
3007	O14	6516	A31		
3008	M21	6530	M26		
3009	O14	6601	K 6		
3010	D21	7000	O19		
3011	P19	7001	O16		
3012	D20	7002	L21		
3013	L20	7003	C20		
3014	M19	7004	O17		
3015	D14	7005	F22		
3016	D13	7006	O20		
3017	B12	7007	H10		
3018	P17	7008	E19		
3019	D11	7009	N21		
3020	N15	7011	N17		
3021	D10	7021	P13		

Interconnections:

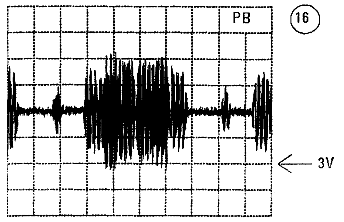
AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14



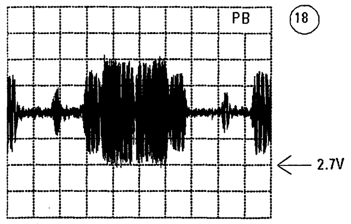
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (PAL)



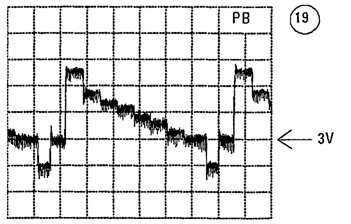
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 46 (SECAM L)



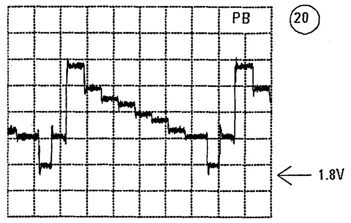
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 52



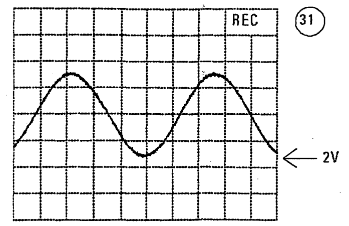
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 48/50



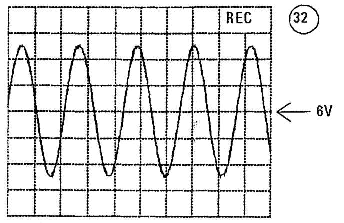
A: AC, 500mV/Div, 10us/Div
IC 7007 Pin 40



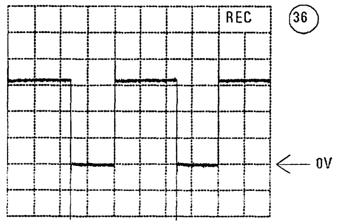
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 42



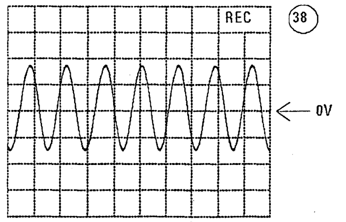
A: AC, 500mV/Div, 200us/Div
Modulator Pin 3



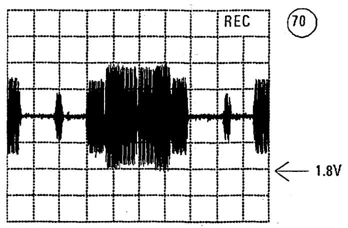
A: AC, 200mV/Div, 500us/Div
C 2503



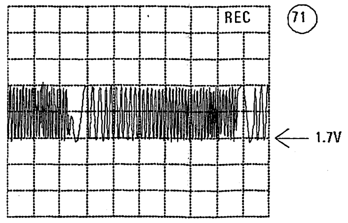
A: DC, 1 V/Div, 10ms/Div
Connector 1961 Pin 7



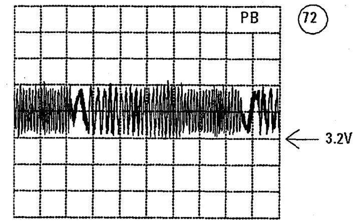
A: DC, 1 V/Div, 10us/Div
Connector 1951 Pin 1



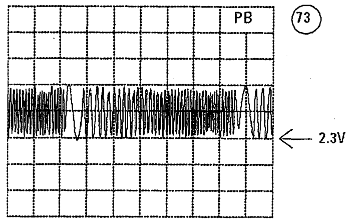
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 14



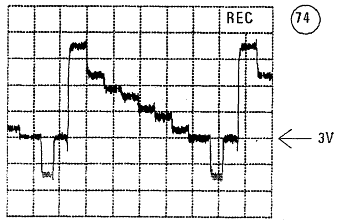
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 18



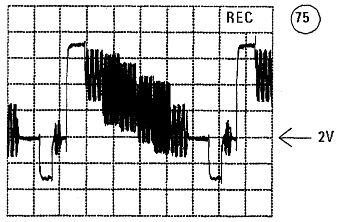
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 15



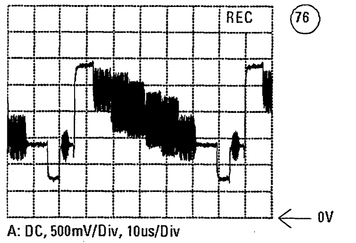
A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 20



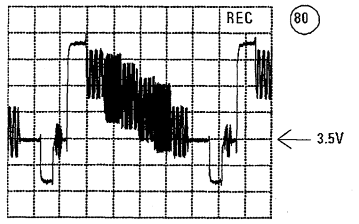
A: AC, 100mV/Div, 10us/Div
IC 7007 Pin 26



A: AC, 200mV/Div, 10us/Div
IC 7007 Pin 28

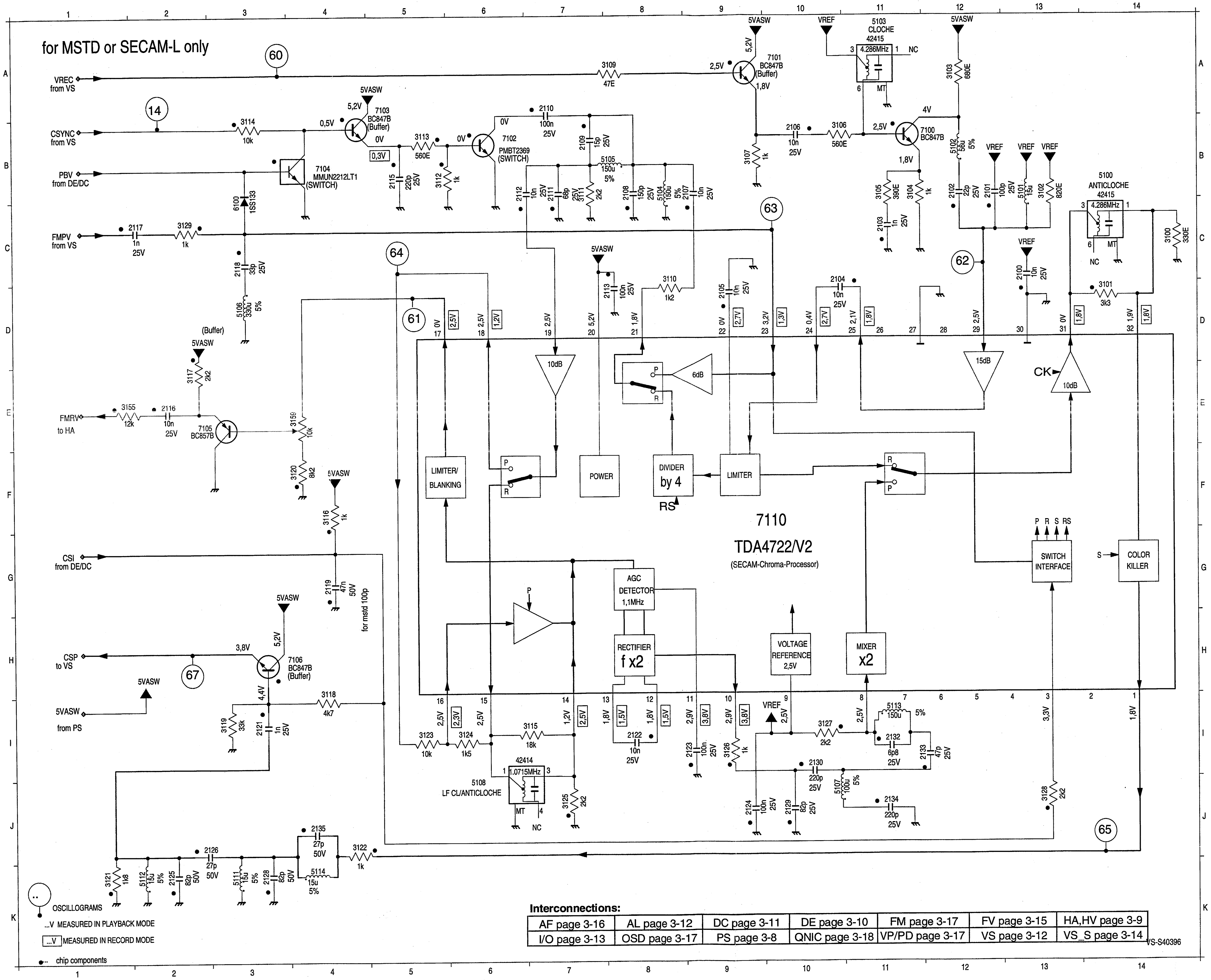


A: DC, 500mV/Div, 10us/Div
IC 7007 Pin 38



A: AC, 100mV/Div, 10us/Div
T 7500 Emitter

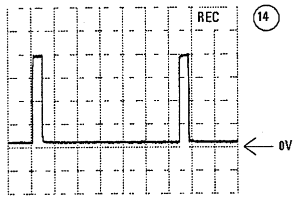
Video Signal Processing Secam (VS_S)


for MSTD or SECAM-L only
VREC from VS
CSYNC from VS
PBV from DE/DC
FMPV from VS
FMRV to HA
CSI from DE/DC
CSP to VS
5VASW from PS
(Buffer)
5VASW
VREF
60
14
61
62
63
64
65
67
3109 47E
7101 BC847B (Buffer)
5103 CLOCHE 42415 4.286MHz
3114 10k
7103 BC847B (Buffer)
3113 560E
7102 PMBT2369 (SWITCH)
7104 MMUN2212LT1 (SWITCH)
6100 1SS133
2110 100n 25V
2109 15p 25V
5105 150u 5%
2106 10n 25V
3106 560E
3107 1k
7100 BC847B
3103 680E
5102 56u 5%
3105 390E
3104 1k
2103 1n 25V
2102 22p 25V
2101 100p 25V
5101 15u
3102 820E
5100 ANTICLOCHE 42415 4.286MHz
3100 330E
3101 3k3
2100 10n 25V
2117 1n 25V
3129 1k
2118 33p 25V
5106 330u 5%
3117 2k2
3155 12k
2116 10n 25V
7105 BC857B
3159 10k
3120 8k2
3116 1k
2119 47n 50V
for mstd 100p
2113 10n 25V
3110 1k2
2105 10n 25V
2104 10n 25V
7106 BC847B (Buffer)
3119 33k
2121 1n 25V
3118 4k7
3123 10k
3124 1k5
3115 18k
5108 LF CL/ANTICLOCHE 42414 1.0715MHz
3125 2k2
2122 10n 25V
2123 100n 25V
3126 1k
3127 2k2
5113 150u 5%
2132 6p8 25V
2133 47p 25V
2130 220p 25V
5107 100u 5%
2134 220p 25V
2124 100n 25V
2129 82p 25V
3128 2k2
2135 27p 50V
3122 1k
5114 15u 5%
3121 1k8
5112 15u 5%
2125 82p 50V
2126 27p 50V
5111 15u 5%
2128 82p 50V
7110
TDA4722/V2
(SECAM-Chroma-Processor)
10dB
6dB
15dB
CK
LIMITER/ BLANKING
POWER
DIVIDER by 4
RS
LIMITER
SWITCH INTERFACE
P R S RS
COLOR KILLER
AGC DETECTOR 1,1MHz
RECTIFIER f x2
VOLTAGE REFERENCE 2,5V
MIXER x2
OSCILLOGRAMS
...V MEASURED IN PLAYBACK MODE
...V MEASURED IN RECORD MODE
chip components
VS-S40396

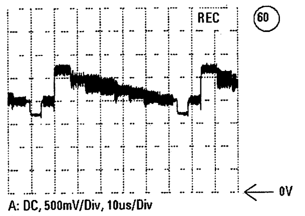
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

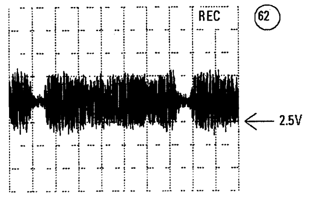
2100	C13
2101	B12
2102	B12
2103	C11
2104	C10
2105	D 9
2106	B10
2107	B 9
2108	B 8
2109	B 7
2110	A 7
2111	B 7
2112	B 6
2113	D 8
2115	B 5
2116	E 2
2117	C 2
2118	C 3
2119	G 4
2121	I 3
2122	I 8
2123	I 9
2124	J 9
2125	K 2
2126	J 2
2128	K 3
2129	J10
2130	I10
2132	I11
2133	I11
2134	J11
2135	J 4
3100	C14
3101	D14
3102	B13
3103	A12
3104	B11
3105	B11
3106	B10
3107	B 9
3109	A 8
3110	C 8
3111	B 7
3112	B 5
3113	B 5
3114	A 3
3115	I 6
3116	F 4
3117	E 2
3118	H 4
3119	I 3
3120	F 4
3121	K 1
3122	J 4
3123	I 5
3124	I 6
3125	J 7
3126	I 9
3127	I10
3128	J13
3129	C 2
3155	E 1
3159	E 4
5100	B14
5101	B13
5102	B12
5103	A11
5104	B 8
5105	B 8
5106	D 3
5107	J10
5108	J 6
5111	K 3
5112	K 2
5113	I11
5114	K 4
6100	B 3
7100	B11
7101	A10
7102	B 6
7103	A 5
7104	B 4
7105	E 3
7106	H 3
7110	F 9



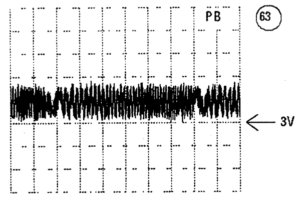
A: DC, 1 V/Div, 10us/Div
R 3114



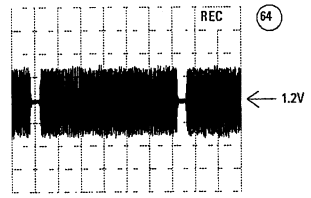
A: DC, 500mV/Div, 10us/Div
R 3109



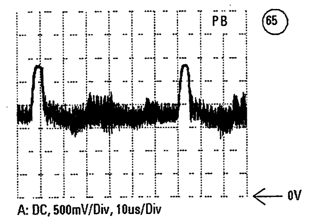
A: AC, 50mV/Div, 10us/Div
IC 7110 Pin 29



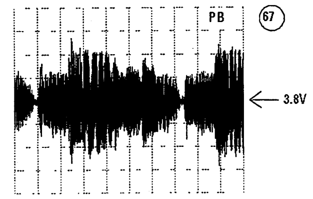
A: AC, 200mV/Div, 10us/Div
IC 7110 Pin 23



A: AC, 200mV/Div, 10us/Div
IC 7110 Pin 18



A: DC, 500mV/Div, 10us/Div
IC 7110 Pin 1



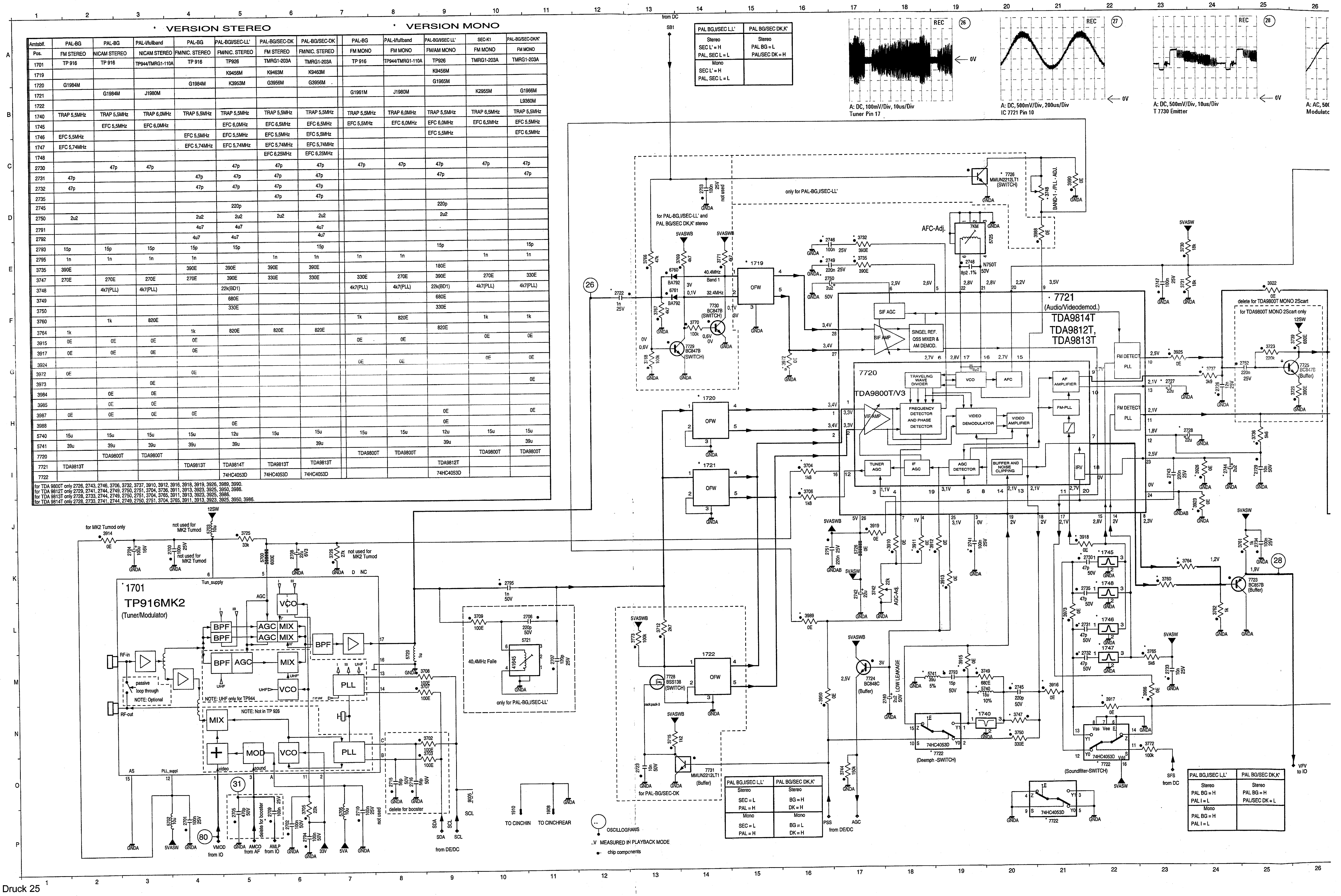
A: AC, 50mV/Div, 10us/Div
Emitter 7106

Frontend (FV)

* VERSION STEREO · * VERSION MONO

Amtsblf.	PAL-BG	PAL-BG	PAL-I/fullband	PAL-BG	PAL-BGI/SEC-LL'	PAL-BG/SEC-DK	PAL-BG/SEC-DK	PAL-BG	PAL-I/fullband	PAL-BG/I/SEC LL'	SEC-K1	PAL-BG/SEC-DK/K'
Pos.	FM STEREO	NICAM STEREO	NICAM STEREO	FM/NIC. STEREO	FM/NIC. STEREO	FM STEREO	FM/NIC. STEREO	FM MONO	FM MONO	FM/AM MONO	FM MONO	FM MONO
1701	TP 916	TP 916	TP944/TMRG1-110A	TP 916	TP926	TMRG1-203A	TMRG1-203A	TP 916	TP944/TMRG1-110A	TP926	TMRG1-203A	TMRG1-203A
1719					K9456M	K9463M	K9463M			K9456M		
1720	G1984M			G1984M	K3953M	G3956M	G3956M			G1965M		
1721		G1984M	J1980M					G1961M	J1980M		K2955M	G1966M
1722												L9360M
1740	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 6,0MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 5,5MHz	TRAP 6,0MHz	TRAP 5,5MHz	TRAP 6,5MHz	TRAP 5,5MHz
1745		EFC 5,5MHz	EFC 6,0MHz		EFC 6,0MHz	EFC 6,5MHz	EFC 6,5MHz	EFC 5,5MHz	EFC 6,0MHz	EFC 6,0MHz	EFC 6,5MHz	EFC 5,5MHz
1746	EFC 5,5MHz			EFC 5,5MHz	EFC 5,5MHz	EFC 5,5MHz	EFC 5,5MHz			EFC 5,5MHz		EFC 6,5MHz
1747	EFC 5,74MHz			EFC 5,74MHz	EFC 5,74MHz	EFC 5,74MHz	EFC 5,74MHz					
1748						EFC 6,25MHz	EFC 6,25MHz					
2730		47p	47p		47p	47p	47p	47p	47p	47p	47p	47p
2731	47p			47p	47p	47p	47p			47p		47p
2732	47p			47p	47p	47p	47p					
2735						47p	47p					
2745					220p					220p		
2750	2u2			2u2	2u2	2u2	2u2			2u2		
2791				4u7	4u7		4u7					
2792				4u7	4u7		4u7					
2793	15p	15p	15p	15p	15p		15p			15p		15p
2795	1n	1n	1n	1n		1n	1n	1n	1n		1n	1n
3735	390E			390E	390E	390E	390E			180E		
3747	270E	270E	270E	270E	390E	330E	330E	330E	270E	390E	270E	330E
3748		4k7(PLL)	4k7(PLL)		22k(BD1)			4k7(PLL)	4k7(PLL)	22k(BD1)	4k7(PLL)	4k7(PLL)
3749					680E					680E		
3750					330E					330E		
3760		1k	820E					1k	820E		1k	1k
3764	1k			1k	820E	820E	820E			820E		
3915	0E	0E	0E	0E				0E	0E		0E	0E
3917	0E	0E	0E	0E								
3924								0E	0E		0E	0E
3972	0E			0E								
3973			0E									0E
3984		0E	0E									
3985		0E	0E									
3987	0E	0E	0E	0E						0E		0E
3988					0E					0E		
5740	15u	15u	15u	15u	12u	15u	15u	15u	15u	12u	15u	15u
5741	39u	39u	39u	39u	39u		39u			39u		39u
7720		TDA9800T	TDA9800T					TDA9800T	TDA9800T		TDA9800T	TDA9800T
7721	TDA9813T			TDA9813T	TDA9814T	TDA9813T	TDA9813T			TDA9812T		
7722					74HC4053D	74HC4053D	74HC4053D			74HC4053D		

for TDA 9800T only 2726, 2743, 2746, 3706, 3732, 3737, 3910, 3912, 3916, 3918, 3919, 3926, 3989, 3990.
for TDA 9812T only 2729, 2741, 2744, 2749, 2750, 2751, 3704, 3736, 3911, 3913, 3923, 3925, 3950, 3986.
for TDA 9813T only 2728, 2733, 2744, 2749, 2750, 2751, 3704, 3765, 3911, 3913, 3923, 3925, 3986.
for TDA 9814T only 2728, 2733, 2741, 2744, 2749, 2750, 2751, 3704, 3765, 3911, 3913, 3923, 3925, 3950, 3986.


from DC
SB1
REC
26
27
28
0V
1701
TP916MK2
(Tuner/Modulator)
RF-in
RF-out
passive loop through
NOTE: Optional
BPF
AGC
MIX
VCO
PLL
MOD
NOTE: UHF only for TP944
NOTE: Not in TP 926
Tun_supply
AS
PLL_suppl
video
sound
for MK2 Tumod only
not used for MK2 Tumod
12SW
40,4MHz Falle
only for PAL-BG,I/SEC-LL'
delete for booster
VMOD from IO
AMCO from AF
AMLP from IO
SDA SCL from DE/DC
TO CINCHIN
TO CINCHREAR
OSCILLOGRAMS
..V MEASURED IN PLAYBACK MODE
• chip components
for PAL-BG,I/SEC-LL' and PAL BG/SEC DK,K' stereo
only for PAL-BG,I/SEC-LL'
1719
OFW
1720
1721
1722
40,4MHz Band 1
32,4MHz
7729 BC847B (SWITCH)
7730 BC847B (SWITCH)
7726 MMUN2212LT1 (SWITCH)
BAND-1-/PLL-ADJ.
AFC-Adj.
7KM
N750T
7721 (Audio/Videodemod.)
TDA9814T
TDA9812T,
TDA9813T
SIF AGC
SIF AMP
SINGEL REF. QSS MIXER & AM DEMOD.
7720
TDA9800T/V3
TRAVELING WAVE DIVIDER
VCO
AFC
AF AMPLIFIER
FM-PLL
VIF-AMP
FREQUENCY DETECTOR AND PHASE DETECTOR
VIDEO DEMODULATOR
VIDEO AMPLIFIER
TUNER AGC
IF AGC
AGC DETECTOR
BUFFER AND NOISE CLIPPING
IRV
FM DETECT PLL
delete for TDA9800T MONO 2Scart
for TDA9800T MONO 2Scart only
7725 BC847B (Buffer)
7723 BC857B (Buffer)
7728 BSS138 (SWITCH)
7731 MMUN2212LT1 (Buffer)
for PAL-BG/SEC-DK
7724 BC848C (Buffer)
LOW LEAKAGE
AGC-Adj.
1740
1745
1748
1746
1747
74HC4053D
7722 (Deemph -SWITCH)
7722 (Soundfilter-SWITCH)
PSS AGC from DE/DC
SFS from DC
VFV to IO
5VASW
5VASWB
GNDA

A: DC, 100mV/Div, 10us/Div
Tuner Pin 17

A: DC, 500mV/Div, 200us/Div
IC 7721 Pin 10

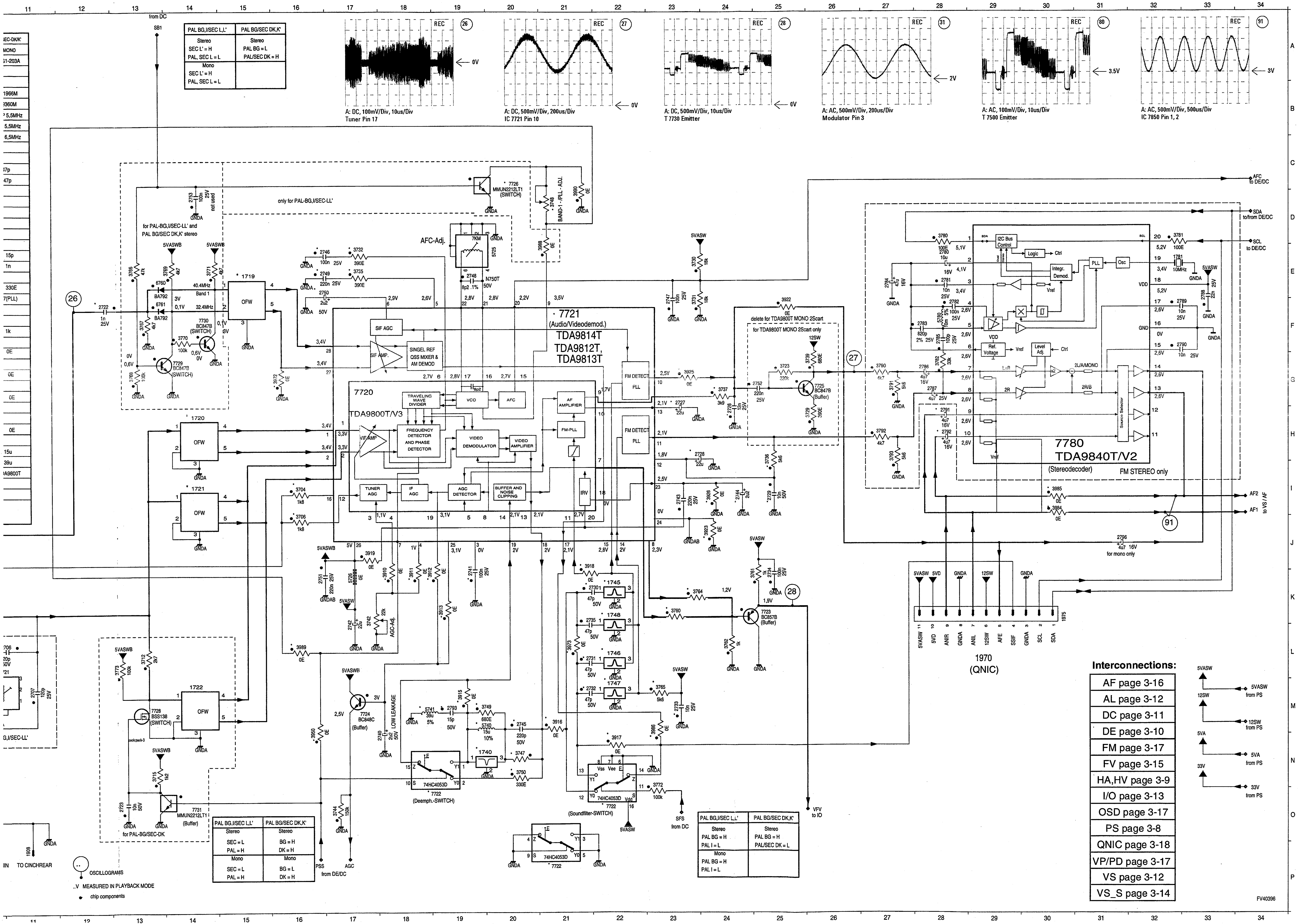
A: DC, 500mV/Div, 10us/Div
T 7730 Emitter

A: AC, 50
Modulat

PAL BG,I/SEC L,L'	PAL BG/SEC DK,K'
Stereo SEC L' = H PAL, SEC L = L	Stereo PAL BG = L PAL/SEC DK = H
Mono SEC L' = H PAL, SEC L = L	

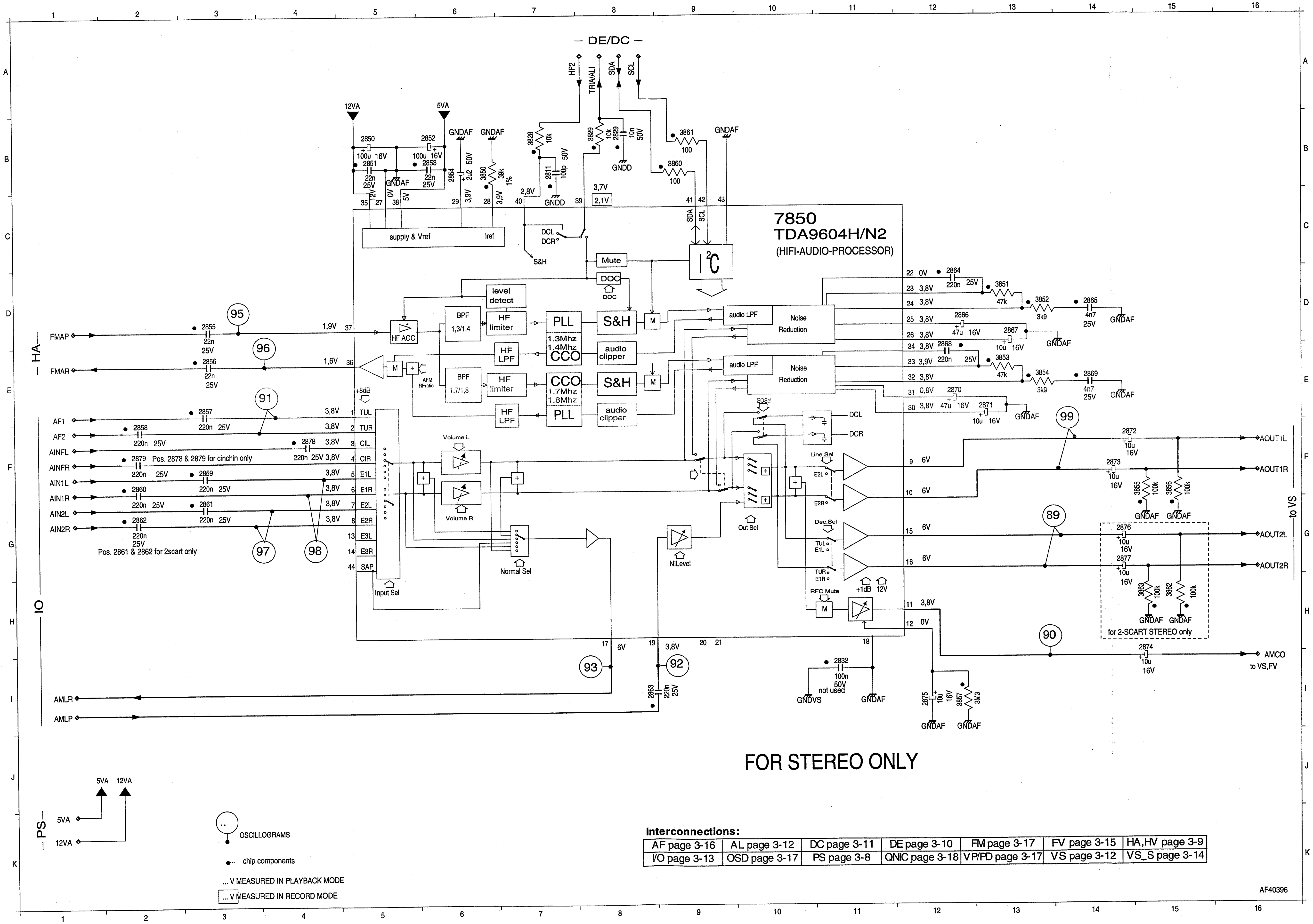
PAL BG,I/SEC L,L'	PAL BG/SEC DK,K'
Stereo SEC = L PAL = H	Stereo BG = H DK = H
Mono SEC = L PAL = H	Mono BG = L DK = H

PAL BG,I/SEC L,L'	PAL BG/SEC DK,K'
Stereo PAL BG = H PAL I = L	Stereo PAL BG = H PAL/SEC DK = L
Mono PAL BG = H PAL I = L	


A: DC, 100mV/Div, 10us/Div Tuner Pin 17
A: DC, 500mV/Div, 200us/Div IC 7721 Pin 10
A: DC, 500mV/Div, 10us/Div T 7730 Emitter
A: AC, 500mV/Div, 200us/Div Modulator Pin 3
A: AC, 100mV/Div, 10us/Div T 7500 Emitter
A: AC, 500mV/Div, 500us/Div IC 7850 Pin 1, 2
7721 (Audio/Videodemod.) TDA9814T TDA9812T, TDA9813T
7720 TDA9800T/V3
7780 TDA9840T/V2 (Stereodecoder) FM STEREO only
1970 (QNIC)
only for PAL-BG,I/SEC-LL'
for PAL-BG,I/SEC-LL' and PAL BG/SEC DK,K' stereo
for PAL-BG/SEC-DK
delete for TDA9800T MONO 2Scart
for TDA9800T MONO 2Scart only
AFC-Adj.
(Deemph.-SWITCH)
(Soundfilter-SWITCH)
Interconnections:
AF page 3-16
AL page 3-12
DC page 3-11
DE page 3-10
FM page 3-17
FV page 3-15
HA,HV page 3-9
I/O page 3-13
OSD page 3-17
PS page 3-8
QNIC page 3-18
VP/PD page 3-17
VS page 3-12
VS_S page 3-14
OSCILLOGRAMS
..V MEASURED IN PLAYBACK MODE
chip components
TO CINCHREAR
FV40396

1701	K 3
1719	E15
1720	H14
1721	I14
1722	M14
1740	N19
1745	K22
1746	L22
1747	M22
1748	K22
1781	E32
1908	P11
1910	P10
1975	K30
2700	J 4
2701	P 4
2702	P 6
2704	J 3
2705	P 5
2706	L11
2707	M11
2708	K 6
2709	P 5
2710	P 7
2715	O 8
2716	O 8
2722	F12
2723	O13
2726	H24
2727	G23
2728	H23
2729	I25
2730	K22
2731	L21
2732	M21
2733	M23
2734	K25
2735	K21
2740	M18
2741	J19
2742	K17
2743	I23
2744	I24
2745	M20
2746	E17
2747	E23
2748	E19
2749	E17
2750	E16
2751	K16
2752	G25
2753	D14
2780	E28
2781	E28
2782	F28
2783	F28
2784	E27
2785	F28
2786	G28
2787	G28
2788	E33
2789	F33
2790	F33
2791	H28
2792	H28
2793	M19
2794	P 6
2795	K10
2796	J31
3702	N 9
3703	O 9
3704	I16
3705	P 6
3706	J16
3707	M 9
3708	M 9
3709	L10
3712	L13
3715	N13
3723	G25
3725	J 5
3726	K 7
3729	H26
3730	E23
3731	E23
3732	E17
3735	E17
3736	H25
3737	G24
3739	G26
3742	K17
3744	O17
3747	N20
3748	D21
3749	M20
3750	N20
3760	K23
3761	K25
3762	L24
3764	K23
3765	M23
3766	E13
3767	F13
3768	G13
3769	E14
3770	F14
3771	E14
3772	N23
3773	L13
3780	D28
3781	D32
3782	G28
3790	G27
3791	G27
3792	H27
3793	H27
3910	K18
3911	K18
3912	K18
3913	K19
3914	J 2
3915	M19
3916	M21
3917	N22
3918	J21
3919	J17
3922	F25
3923	J24
3925	G23
3926	I24
3950	M16
3972	G16
3973	L21
3984	I30
3985	I30
3986	M23
3988	D21
3989	L16
3990	C21
5700	K 5
5702	P 3
5703	J 4
5705	P 7
5720	M 8
5721	L10
5725	E20
5726	K17
5740	M20
5741	M18
5780	F28
6760	E13
6761	F13
7720	G17
7721	F21
7722	O22
7722	O19
7722	P21
7723	K25
7724	M17
7725	G26
7726	C20
7728	M13
7729	G14
7730	F14
7731	O14
7780	H30
9005	O 9

Audio FM Processing (AF)



— DE/DC —
HP2
TRIA/ALI
SDA
SCL
12VA
5VA
GNDAF
GNDD
GNDVS
7850
TDA9604H/N2
(HIFI-AUDIO-PROCESSOR)
supply & Vref
Iref
DCL
DCR
S&H
Mute
DOC
I²C
level detect
HF AGC
BPF 1,3/1,4
BPF 1,7/1,8
HF limiter
HF LPF
PLL
CCO
1.3Mhz
1.4Mhz
1.7Mhz
1.8Mhz
audio clipper
audio LPF
Noise Reduction
AFM RFratio
+6dB
Input Sel
Volume L
Volume R
Normal Sel
NlLevel
EOSel
Line Sel
Out Sel
Dec.Sel
RFC Mute
+1dB
12V
— HA —
FMAP
FMAR
— IO —
AF1
AF2
AINFL
AINFR
AIN1L
AIN1R
AIN2L
AIN2R
TUL
TUR
CIL
CIR
E1L
E1R
E2L
E2R
E3L
E3R
SAP
Pos. 2878 & 2879 for cinchin only
Pos. 2861 & 2862 for 2scart only
AMLR
AMLP
AOUT1L
AOUT1R
AOUT2L
AOUT2R
AMCO
to VS,FV
— to VS —
for 2-SCART STEREO only
not used
— PS —
5VA
12VA
95
96
91
97
98
93
92
99
89
90
FOR STEREO ONLY
AF40396

2811	B 7
2829	B 8
2832	I11
2850	B 5
2851	B 5
2852	B 6
2853	B 6
2854	B 6
2855	D 3
2856	E 3
2857	E 3
2858	F 2
2859	F 3
2860	F 2
2861	G 3
2862	G 2
2863	I 8
2864	D12
2865	D14
2866	D12
2867	D13
2868	E12
2869	E14
2870	E12
2871	E13
2872	F14
2873	F14
2874	I15
2875	I12
2876	G14
2877	G14
2878	F 4
2879	F 2
3828	B 7
3829	B 8
3850	B 6
3851	D13
3852	D13
3853	E13
3854	E13
3855	F15
3856	F15
3857	I12
3860	B 9
3861	B 9
3862	H15
3863	H15
7850	C10

OSCILLOGRAMS

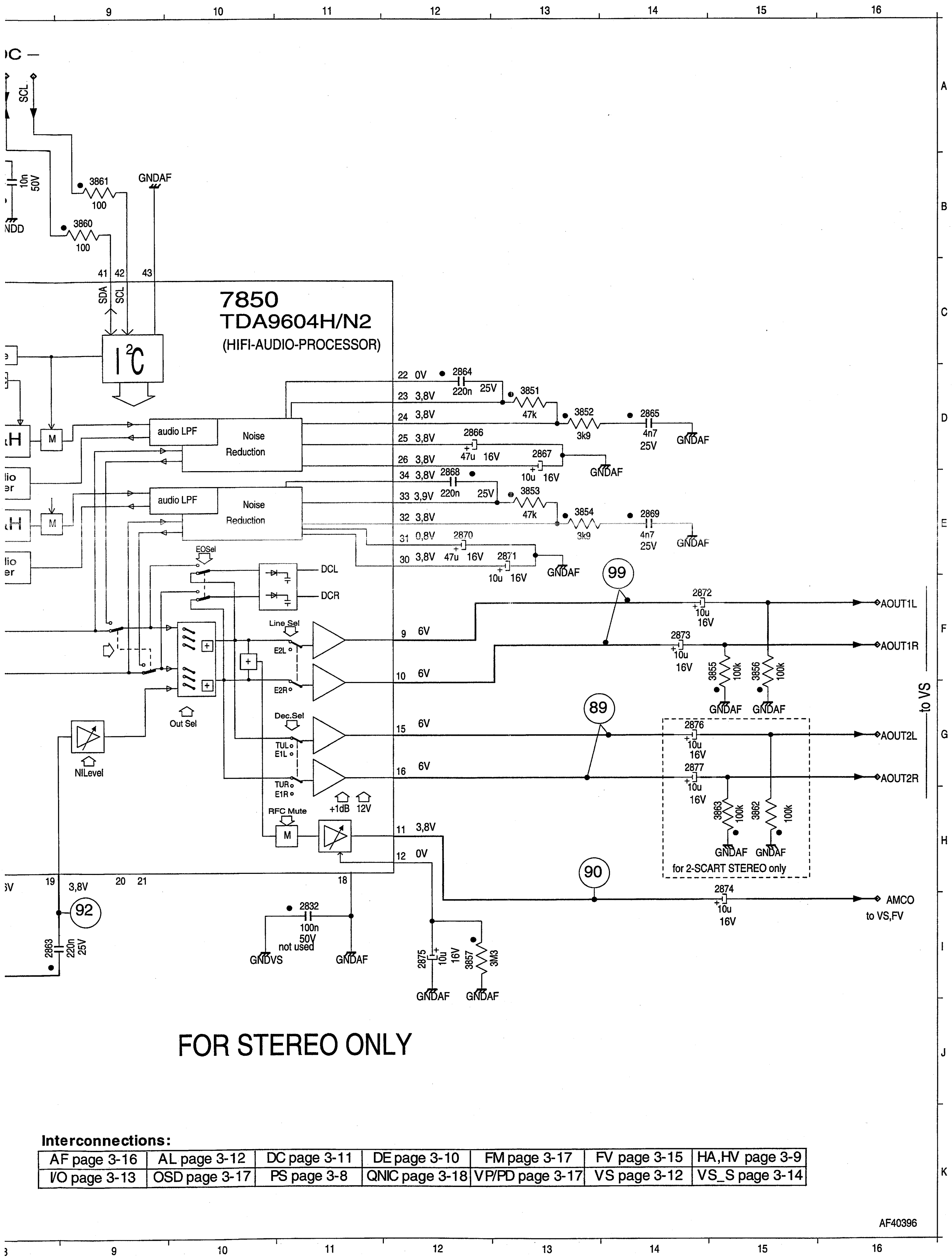
chip components

... V MEASURED IN PLAYBACK MODE

... V MEASURED IN RECORD MODE

Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

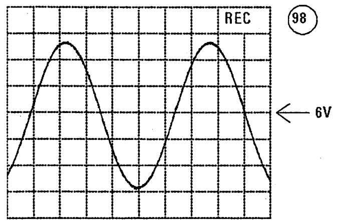

7850
TDA9604H/N2
(HIFI-AUDIO-PROCESSOR)
I²C
SDA
SCL
3861
100
3860
100
GNDAF
10n
50V
41 42 43
audio LPF
Noise Reduction
22 0V
23 3,8V
24 3,8V
25 3,8V
26 3,8V
34 3,8V
33 3,9V
32 3,8V
31 0,8V
30 3,8V
2864 220n 25V
3851 47k
3852 3k9
2865 4n7 25V
2866 47u 16V
2867 10u 16V
2868 220n 25V
3853 47k
3854 3k9
2869 4n7 25V
2870 47u 16V
2871 10u 16V
EOSel
DCL
DCR
Line Sel
E2L
E2R
Dec.Sel
TUL
E1L
TUR
E1R
Out Sel
NILevel
RFC Mute
+1dB
12V
9 6V
10 6V
15 6V
16 6V
11 3,8V
12 0V
2872 10u 16V
2873 10u 16V
3855 100k
3856 100k
2876 10u 16V
2877 10u 16V
3863 100k
3862 100k
for 2-SCART STEREO only
2874 10u 16V
AOUT1L
AOUT1R
AOUT2L
AOUT2R
AMCO
to VS,FV
to VS
99
89
90
92
19 3,8V 20 21 18
2832 100n 50V not used
GNDVS
2863 220n 25V
2875 10u 16V
3857 3M3
GNDAF
9 10 11 12 13 14 15 16
A B C D E F G H I J K
AF40396

FOR STEREO ONLY

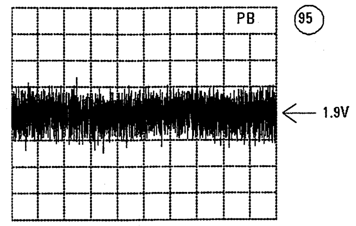
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

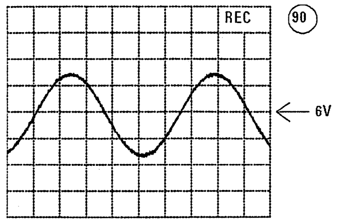
2811	B 7
2829	B 8
2832	I11
2850	B 5
2851	B 5
2852	B 6
2853	B 6
2854	B 6
2855	D 3
2856	E 3
2857	E 3
2858	F 2
2859	F 3
2860	F 2
2861	G 3
2862	G 2
2863	I 8
2864	D12
2865	D14
2866	D12
2867	D13
2868	E12
2869	E14
2870	E12
2871	E13
2872	F14
2873	F14
2874	I15
2875	I12
2876	G14
2877	G14
2878	F 4
2879	F 2
3828	B 7
3829	B 8
3850	B 6
3851	D13
3852	D13
3853	E13
3854	E13
3855	F15
3856	F15
3857	I12
3860	B 9
3861	B 9
3862	H15
3863	H15
7850	C10



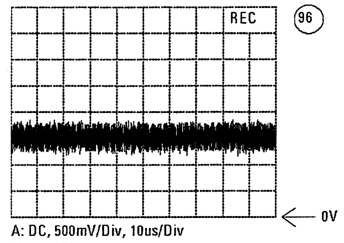
A: AC, 200mV/Div, 200us/Div
IC7850 Pin 5, 6



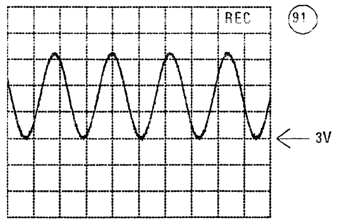
A: AC, 200mV/Div, 100us/Div
IC 7850 Pin 37



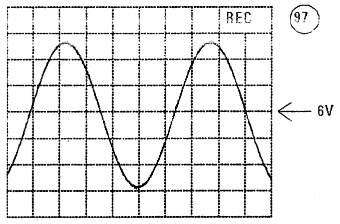
A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 11



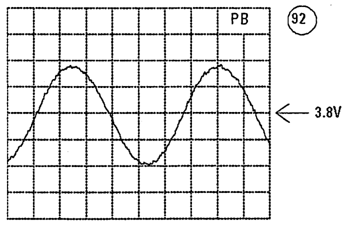
A: DC, 500mV/Div, 10us/Div
IC 7850 Pin 36



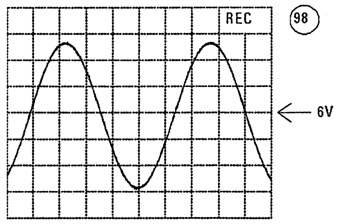
A: AC, 500mV/Div, 500us/Div
IC 7850 Pin 1, 2



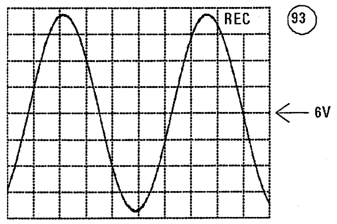
A: AC, 200mV/Div, 200us/Div
IC7850 Pin 7, 8



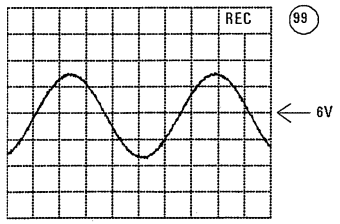
A: AC, 200mV/Div, 200us/Div
IC 7850 Pin 19



A: AC, 200mV/Div, 200us/Div
IC7850 Pin 5, 6

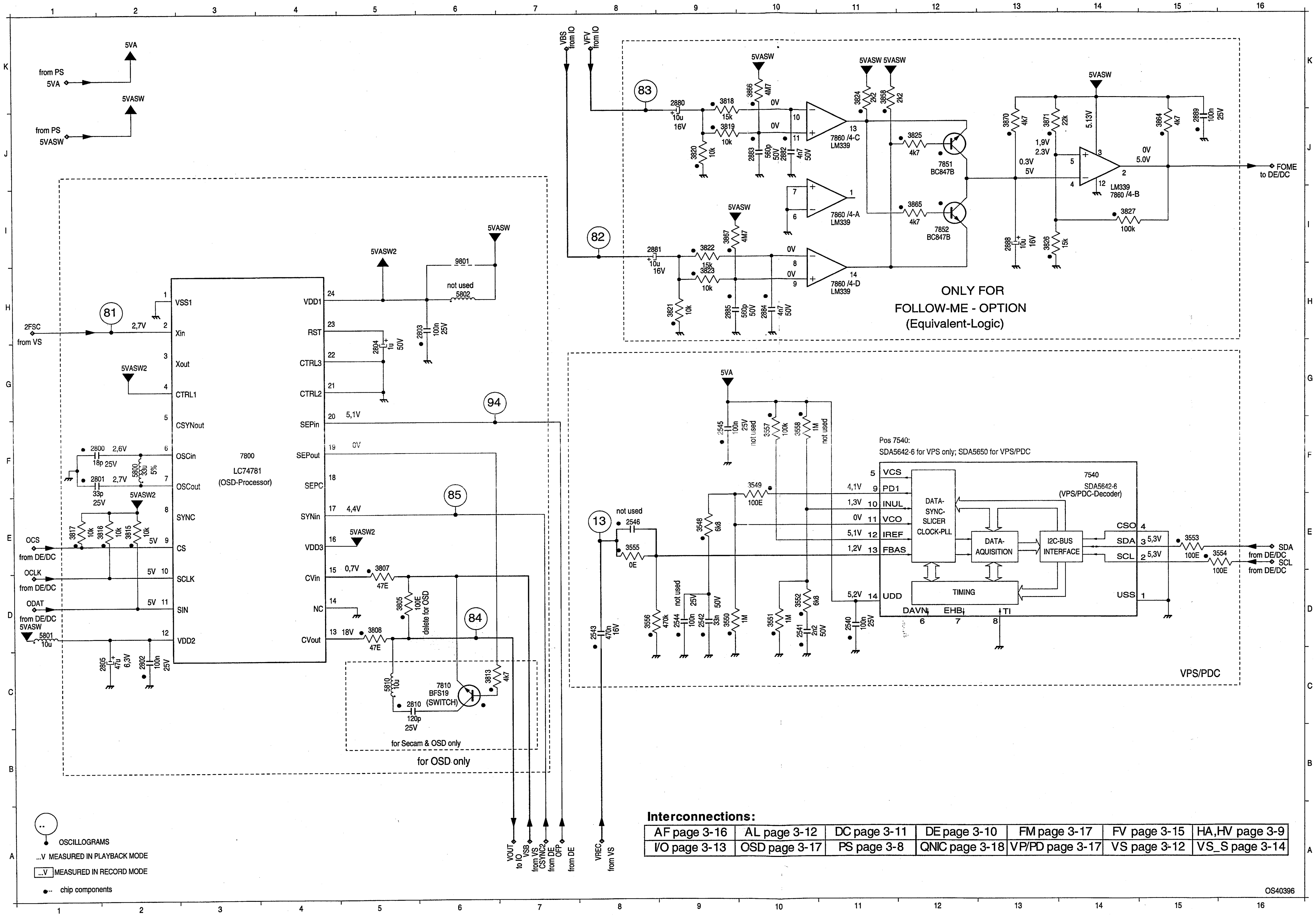


A: AC, 200mV/Div, 200us/Div
IC 7850 Pin 17



A: AC, 500mV/Div, 200us/Div
IC 7850 Pin 9, 10

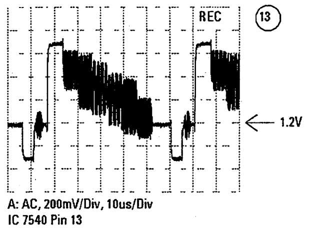
On Screen Display (OS), Follow Me (FM), Video Programming System / Programm Delivery Control (VP/PD)


5VA
from PS
5VA
5VASW
from PS
5VASW
2FSC
from VS
81
2,7V
7800
LC74781
(OSD-Processor)
VSS1
Xin
Xout
CTRL1
CSYNout
OSCin
OSCout
SYNC
CS
SCLK
SIN
VDD2
VDD1
RST
CTRL3
CTRL2
SEPin
SEPout
SEPC
SYNin
VDD3
CVin
NC
CVout
5VASW2
2800 2,6V
18p 25V
2801 2,7V
33p 25V
5800 33u 5%
OCS
from DE/DC
OCLK
from DE/DC
ODAT
from DE/DC
5VASW
5801 10u
3817 10k
3816 10k
3815 10k
5V
2805 47u 6,3V
2802 100n 25V
5VASW
9801
not used
5802
2804 1u 50V
2803 100n 25V
94
20 5,1V
19 0V
85
17 4,4V
16
15 0,7V
3807 47E
3805 100E
delete for OSD
84
13 18V
3808 47E
5810 10u
7810 BFS19 (SWITCH)
2810 120p 25V
3813 4K7
for Secam & OSD only
for OSD only
VOUT to IO
VSB from VS
CSYNC2 from DE
OFP from DE
from DE
VBS from IO
VFV from IO
83
82
2880 10u 16V
3818 15k
3819 10k
3820 10k
3866 4M7
2883 560p 50V
2882 4n7 50V
0V
7860 /4-C LM339
7860 /4-A LM339
2881 10u 16V
3822 15k
3823 10k
3821 10k
3867 4M7
2885 560p 50V
2884 4n7 50V
7860 /4-D LM339
3824 2k2
3858 2k2
3825 4k7
7851 BC847B
3865 4k7
7852 BC847B
3870 4k7
3871 22k
5.13V
1,9V
2.3V
0.3V
5V
0V
5.0V
LM339
7860 /4-B
3864 4k7
2889 100n 25V
3827 100k
2888 10u 16V
3826 15k
FOME
to DE/DC
ONLY FOR
FOLLOW-ME - OPTION
(Equivalent-Logic)
5VA
2545 100n 25V
3557 100k not used
3558 1M not used
Pos 7540:
SDA5642-6 for VPS only; SDA5650 for VPS/PDC
7540
SDA5642-6
(VPS/PDC-Decoder)
VCS
PD1
INUL
VCO
IREF
FBAS
UDD
4,1V
1,3V
0V
5,1V
1,2V
5,2V
3549 100E
3548 6k8
13
not used
2546
3555 0E
DATA-SYNC-SLICER CLOCK-PLL
DATA-AQUISITION
I2C-BUS INTERFACE
TIMING
DAVN
EHB
TI
CSO
SDA
SCL
USS
5,3V
3553 100E
3554 100E
SDA
from DE/DC
SCL
from DE/DC
2543 470n 16V
3556 470k
2544 100n 25V
2542 33n 50V
3550 1M
3551 1M
3552 6k8
2541 2n2 50V
2540 100n 25V
VPS/PDC
VREC from VS
OSCILLOGRAMS
...V MEASURED IN PLAYBACK MODE
...V MEASURED IN RECORD MODE
chip components
OS40396

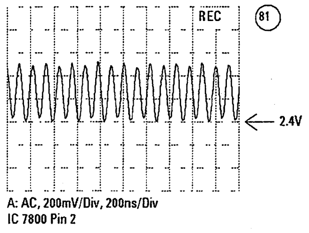
Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

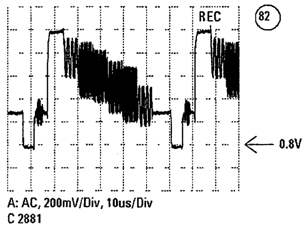
9801	C 6
7860	B11
7860	D11
7860	C11
7860	B14
7852	C12
7851	B12
7810	I 6
7800	F 3
7540	F14
5810	I 5
5802	D 6
5801	H 1
5800	F 2
3871	A13
3870	A13
3867	C 9
3866	A10
3865	C12
3864	A15
3858	A11
3827	C14
3826	C13
3825	B12
3824	A11
3823	C 9
3822	C 9
3821	D 9
3820	B 9
3819	B 9
3818	A 9
3817	G 1
3816	G 2
3815	G 2
3813	I 6
3808	H 5
3807	G 5
3805	H 5
3558	E10
3557	F10
3556	H 8
3555	G 8
3554	G16
3553	G15
3552	H10
3551	H10
3550	H 9
3549	F10
3548	G 9
2889	A15
2888	C13
2885	D 9
2884	D10
2883	B10
2882	B10
2881	C 8
2880	A 9
2810	I 5
2805	H 2
2804	D 5
2803	D 6
2802	H 2
2801	F 1
2800	F 1
2546	G 8
2545	E 9
2544	H 9
2543	H 8
2542	H 9
2541	H10
2540	H11



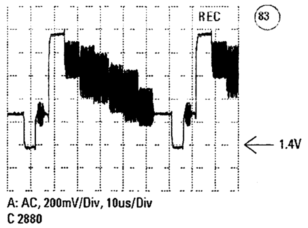
A: AC, 200mV/Div, 10us/Div
IC 7540 Pin 13



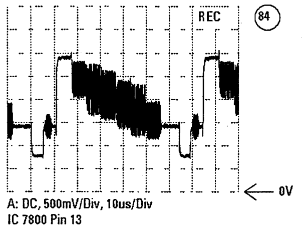
A: AC, 200mV/Div, 200ns/Div
IC 7800 Pin 2



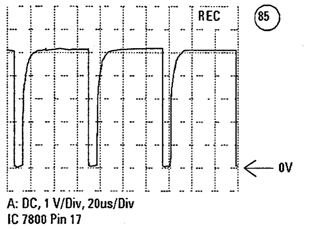
A: AC, 200mV/Div, 10us/Div
C 2881



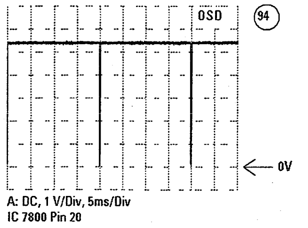
A: AC, 200mV/Div, 10us/Div
C 2880



A: DC, 500mV/Div, 10us/Div
IC 7800 Pin 13

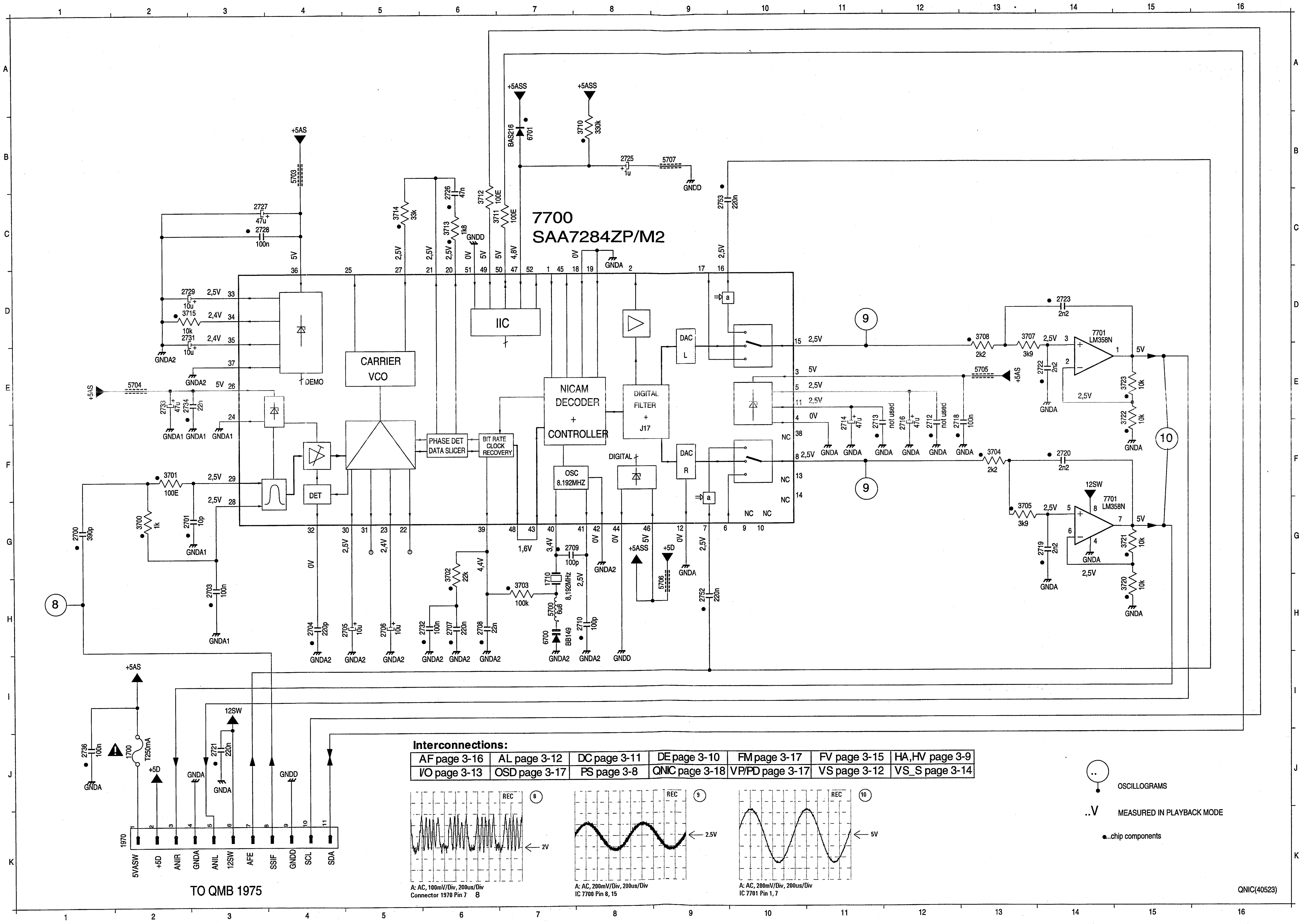


A: DC, 1 V/Div, 20us/Div
IC 7800 Pin 17



A: DC, 1 V/Div, 5ms/Div
IC 7800 Pin 20

Nicam Board (QNIC)


7700
SAA7284ZP/M2
IIC
CARRIER VCO
NICAM DECODER + CONTROLLER
DIGITAL FILTER + J17
PHASE DET DATA SLICER
BIT RATE CLOCK RECOVERY
OSC 8.192MHZ
DET
DEMO
DAC L
DAC R
DIGITAL
7701 LM358N
+5AS
+5ASS
+5D
12SW
GNDA
GNDA1
GNDA2
GNDD
1970
5VASW
+5D
ANIR
GNDA
ANIL
12SW
AFE
SSIF
GNDD
SCL
SDA
TO QMB 1975
T250mA
REC
2V
2.5V
5V
OSCILLOGRAMS
..V MEASURED IN PLAYBACK MODE
●...chip components
QNIC(40523)

Interconnections:

AF page 3-16	AL page 3-12	DC page 3-11	DE page 3-10	FM page 3-17	FV page 3-15	HA,HV page 3-9
I/O page 3-13	OSD page 3-17	PS page 3-8	QNIC page 3-18	VP/PD page 3-17	VS page 3-12	VS_S page 3-14

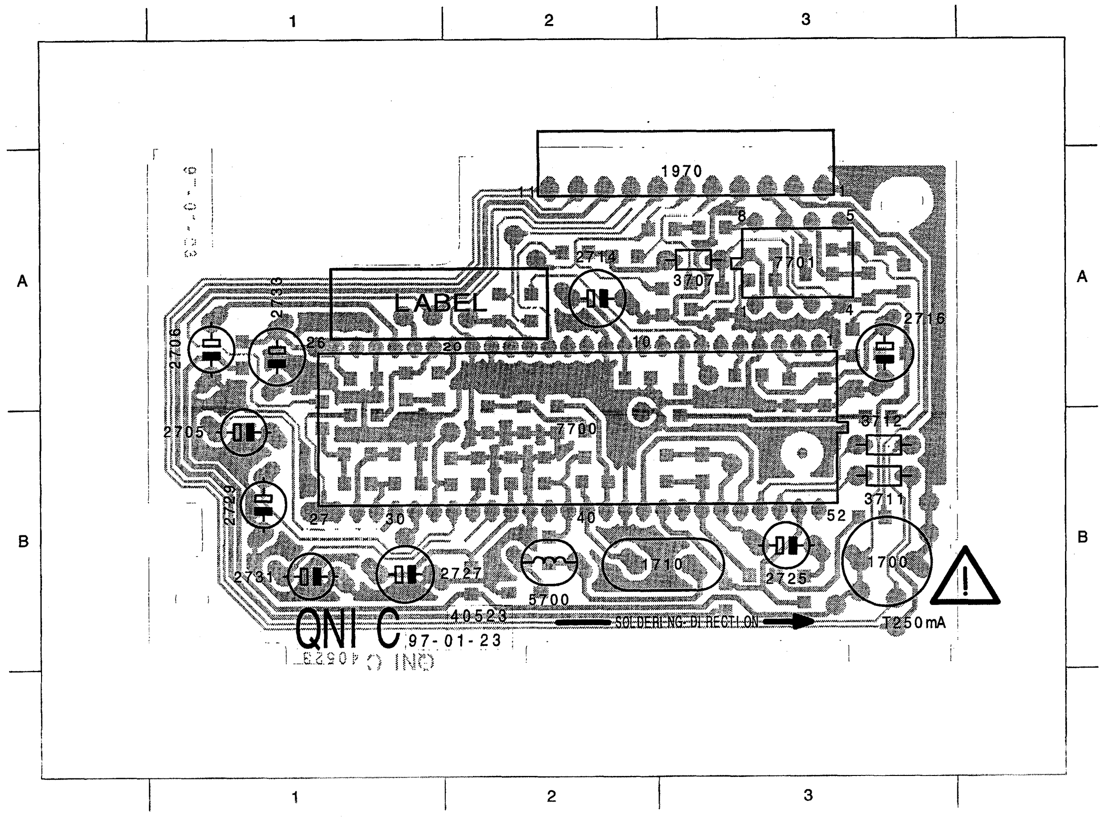
A: AC, 100mV/Div, 200us/Div
Connector 1970 Pin 7 8

A: AC, 200mV/Div, 200us/Div
IC 7700 Pin 8, 15

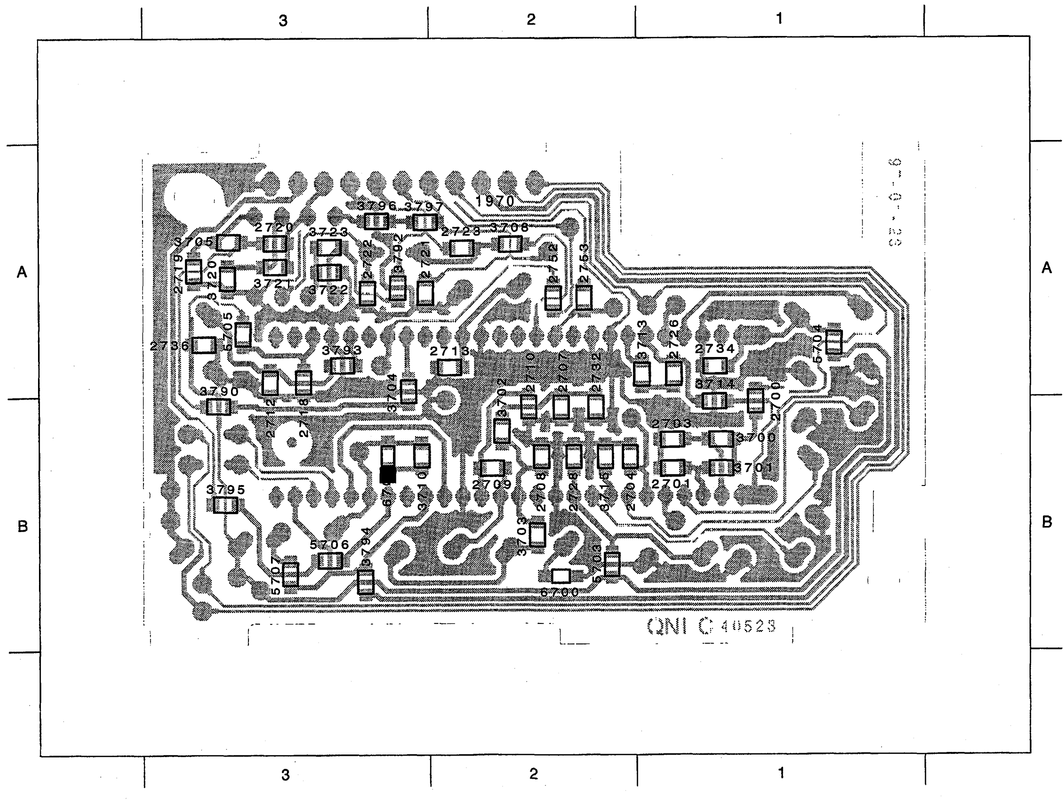
A: AC, 200mV/Div, 200us/Div
IC 7701 Pin 1, 7

1700	J 2
1710	H 7
1970	K 2
2700	G 1
2701	G 2
2703	H 3
2704	H 4
2705	H 5
2706	H 5
2707	H 6
2708	H 6
2709	G 7
2710	H 8
2712	F12
2713	F11
2714	F11
2716	F12
2718	F12
2719	G14
2720	F14
2721	J 3
2722	E14
2723	D14
2725	B 8
2726	C 6
2727	C 3
2728	C 3
2729	D 2
2731	D 2
2732	H 6
2733	E 2
2734	E 2
2736	J 1
2752	H 9
2753	C 9
3700	G 2
3701	F 2
3702	G 6
3703	H 7
3704	F13
3705	G13
3707	D13
3708	D13
3710	B 8
3711	C 7
3712	C 6
3713	C 6
3714	C 5
3715	D 3
3720	H15
3721	G15
3722	E15
3723	E15
5700	H 7
5703	B 4
5704	E 2
5705	E13
5706	H 9
5707	B 9
6700	H 7
6701	B 7
7700	C 7
7701	D14
7701	G14

Nicam Board (QNIC)

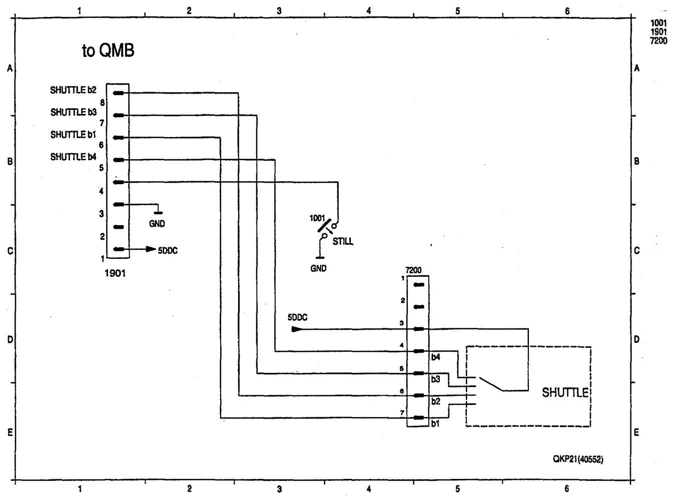

1970
LABEL
QNI C
40523
97-01-23
SOLDERING DIRECTION
T250mA
1700
1710
2705
2706
2714
2716
2725
2727
2729
2731
2733
3707
3711
3712
5700
7700
7701

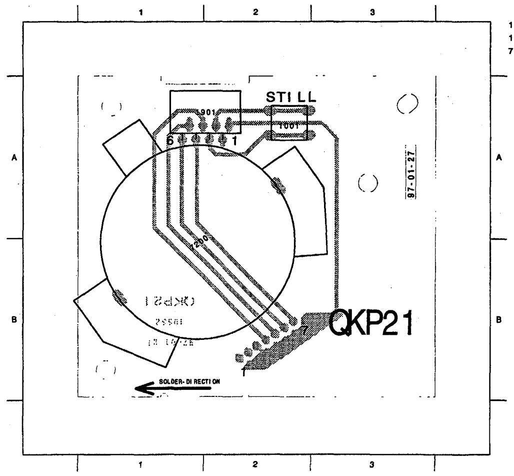
1700	B	3
1710	B	3
1970	A	3
2705	B	1
2706	A	1
2714	A	2
2716	A	3
2725	B	3
2727	B	1
2729	B	1
2731	B	1
2733	A	1
3707	A	3
3711	B	3
3712	B	3
5700	B	2
7700	B	2
7701	A	3


1970
QNI C 40523

2700	B	1	3708	A	2
2701	B	1	3710	B	3
2703	B	1	3713	A	1
2704	B	2	3714	B	1
2707	B	2	3715	B	2
2708	B	2	3720	A	3
2709	B	2	3721	A	3
2710	B	2	3722	A	3
2712	A	3	3723	A	3
2713	A	2	3790	B	3
2718	A	3	3792	A	3
2719	A	3	3793	A	3
2720	A	3	3794	B	3
2721	A	3	3795	B	3
2722	A	3	3796	A	3
2723	A	2	3797	A	3
2726	A	1	5703	B	2
2728	B	2	5704	A	1
2732	B	2	5705	A	3
2734	A	1	5706	B	3
2736	A	3	5707	B	3
2752	A	2	6700	B	2
2753	A	2	6701	B	3
3700	B	1			
3701	B	1			
3702	B	2			
3703	B	2			
3704	A	3			
3705	A	3			

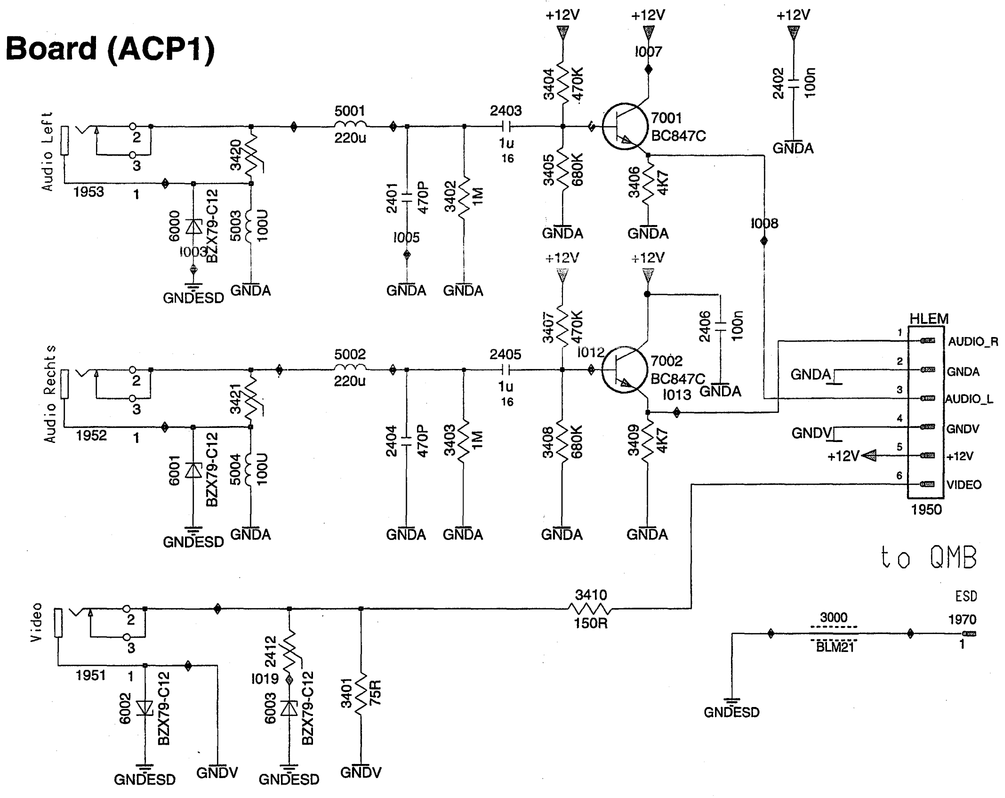
Shuttle Board (QKP21)

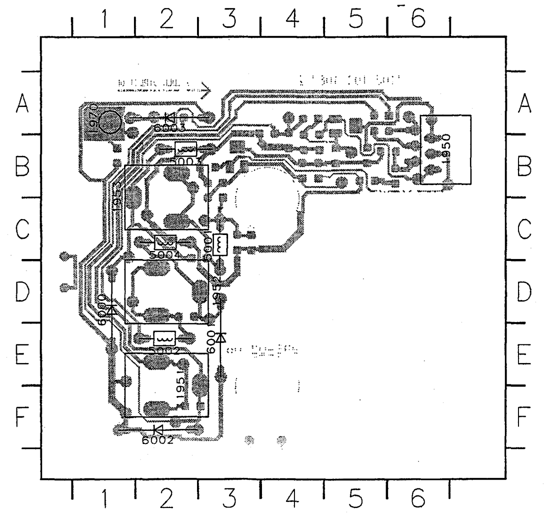

to QMB
SHUTTLE b2
SHUTTLE b3
SHUTTLE b1
SHUTTLE b4
GND
5DDC
1901
1001
STILL
GND
7200
5DDC
b4
b3
b2
b1
SHUTTLE
QKP21(40552)
1001
1901
7200


STILL
1001
1901
QKP21
SOLDERING DIRECTION

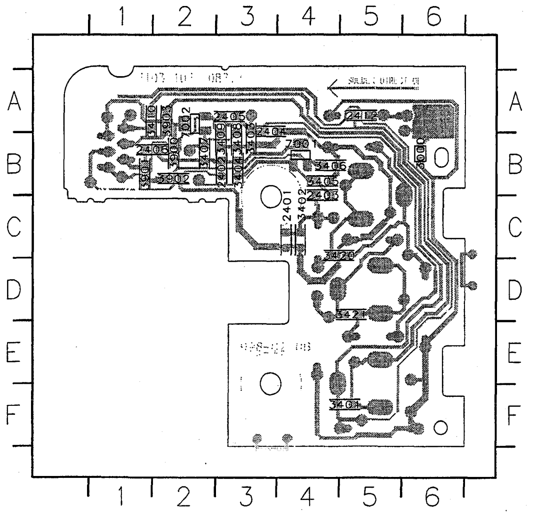
1001	A	2
1901	A	2
7200	B	2

Socket Board (ACP1)


+12V
+12V
I007
+12V
Audio Left
1953
5001
220u
2403
1u
16
3404
470K
7001
BC847C
2402
100n
GNDA
3420
2401
470P
3402
1M
3405
680K
3406
4K7
I008
6000
BZX79-C12
5003
100U
I003
I005
GNDA
GNDA
GNDESD
GNDA
GNDA
GNDA
+12V
+12V
3407
470K
2406
100n
HLEM
AUDIO_R
GNDA
AUDIO_L
GNDV
+12V
VIDEO
1950
Audio Rechts
1952
5002
220u
2405
1u
16
I012
7002
BC847C
I013
GNDA
3421
2404
470P
3403
1M
3408
680K
3409
4K7
6001
BZX79-C12
5004
100U
GNDESD
GNDA
GNDA
GNDA
GNDA
GNDA
to QMB
ESD
Video
1951
3410
150R
3000
BLM21
1970
2412
I019
6002
BZX79-C12
6003
BZX79-C12
3401
75R
GNDESD
GNDV
GNDESD
GNDV
GNDESD

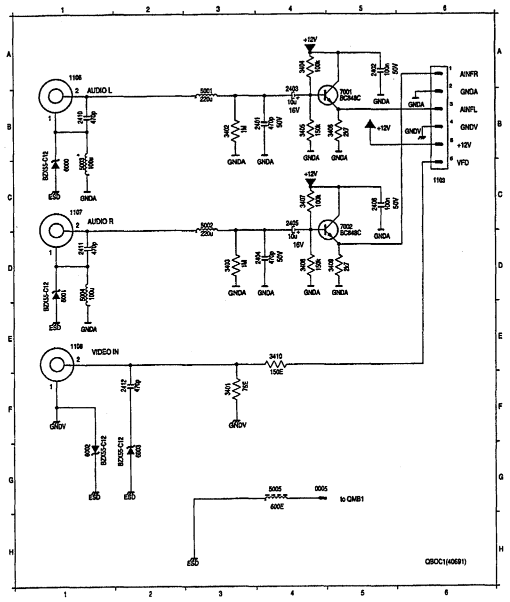


1950	B6
1951	E2
1952	D3
1953	B1
1970	A1
5001	C3
5002	E2
5003	B2
5004	C2
6000	D1
6001	E3
6002	F2
6003	A2

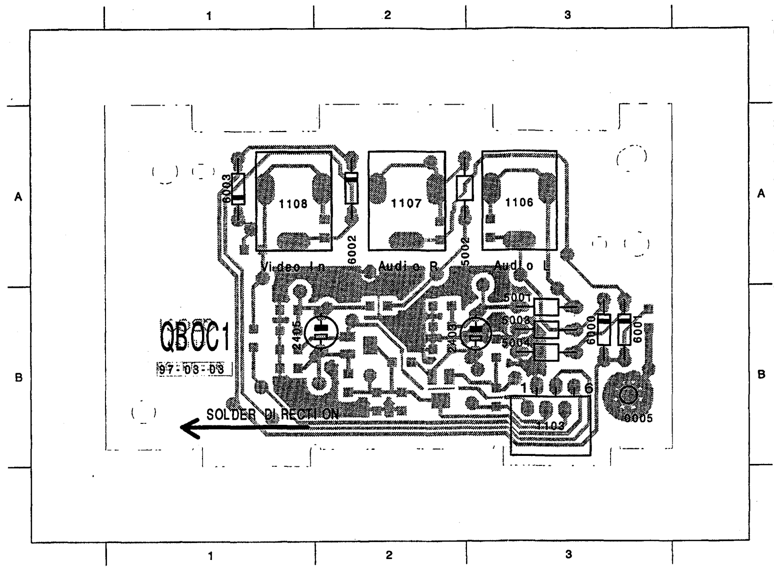


2401	C4
2402	B3
2403	B4
2404	A3
2405	A3
2406	B1
2412	A5
3000	B6
3401	F5
3402	C4
3403	B3
3404	B3
3405	B4
3406	B4
3407	B2
3408	B3
3409	B3
3410	A1
3420	C4
3421	D5
3900	B2
3901	B1
3902	B2
3903	A2
7001	B4
7002	A2

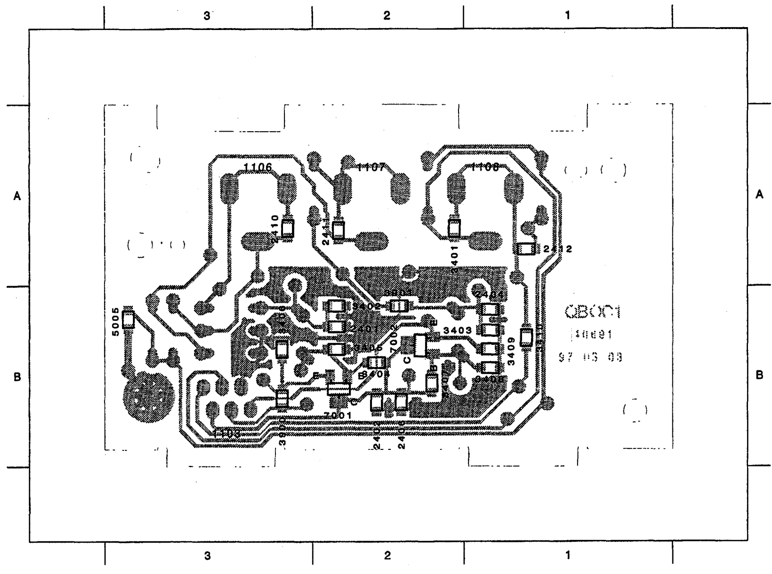
Socket Boards (QBOC1,QBOE1,QBOG1)


AUDIO L
AUDIO R
VIDEO IN
AINFR
GNDA
AINFL
GNDV
+12V
VFD
BC848C
BZX55-C12
to QMB1
QBOC1(40691)

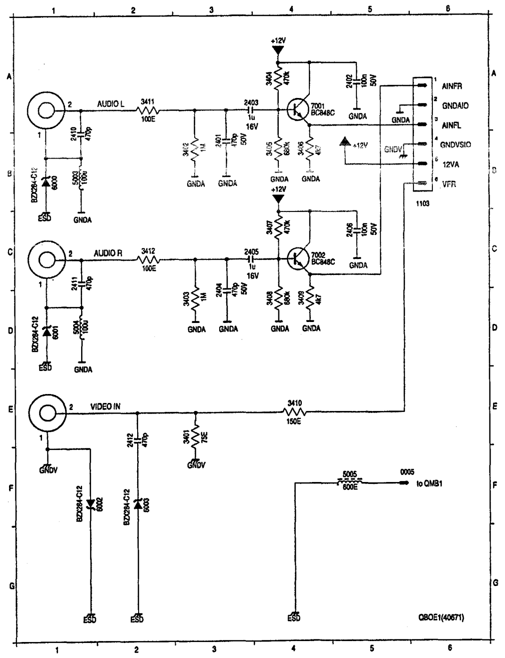
0005	G	4
1103	C	6
1106	A	1
1107	C	1
1108	E	1
2401	B	4
2402	A	5
2403	B	4
2404	D	4
2405	C	4
2406	C	5
2410	B	1
2411	D	1
2412	F	2
3401	F	3
3402	B	3
3403	D	3
3404	A	4
3405	B	4
3406	B	5
3407	C	4
3408	D	4
3409	D	5
3410	E	4
5001	B	3
5002	C	3
5003	C	1
5004	D	1
5005	G	4
6000	C	1
6001	D	1
6002	G	1
6003	G	2
7001	B	5
7002	C	5


1108
1107
1106
Video In
Audio R
Audio L
QBOC1
97-03-03
SOLDER DIRECTION

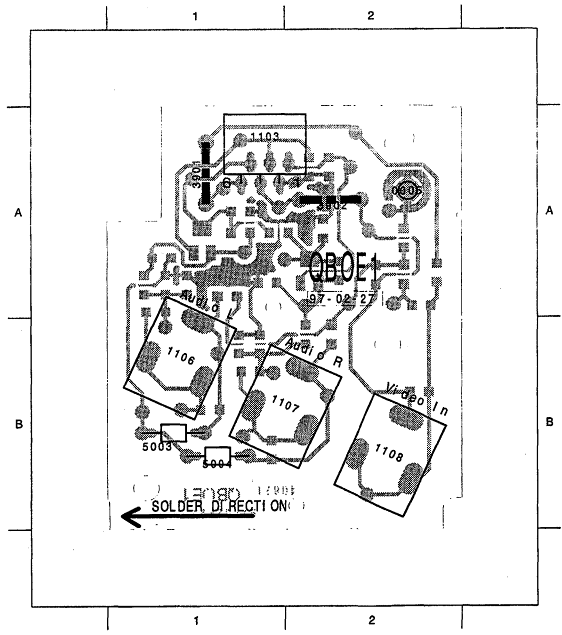
0005	B	3
1103	B	3
1106	A	3
1107	A	2
1108	A	2
2403	B	3
2405	B	2
5001	B	3
5002	A	2
5003	B	3
5004	B	3
6000	B	3
6001	B	3
6002	A	2
6003	A	1


1106
1107
1108
QBOC1
40691
97 03 03

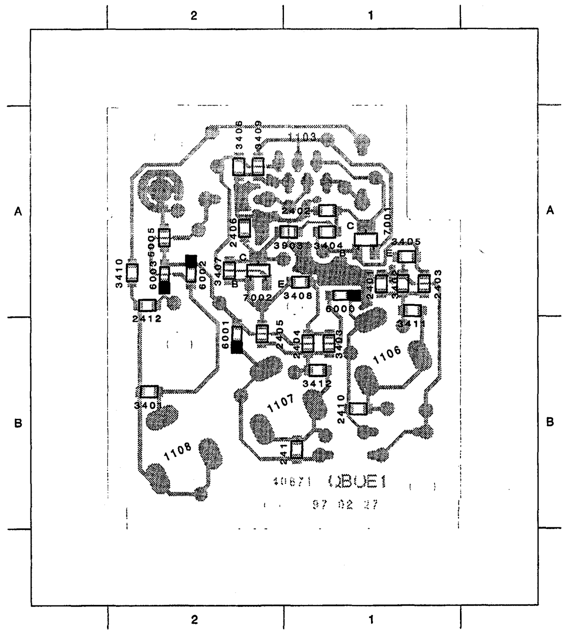
2401	B	2
2402	B	2
2404	B	1
2406	B	2
2410	A	3
2411	A	2
2412	A	1
3401	A	2
3402	B	2
3403	B	1
3404	B	2
3405	B	2
3406	B	3
3407	B	2
3408	B	1
3409	B	1
3410	B	1
3900	B	3
3901	B	2
5005	B	3
7001	B	2
7002	B	2


AUDIO L
AUDIO R
VIDEO IN
AINFR
GNDAIO
AINFL
GNDVSIO
12VA
VFR
+12V
BC848C
BZX55-C12
to QMB1
QBOE1(40671)

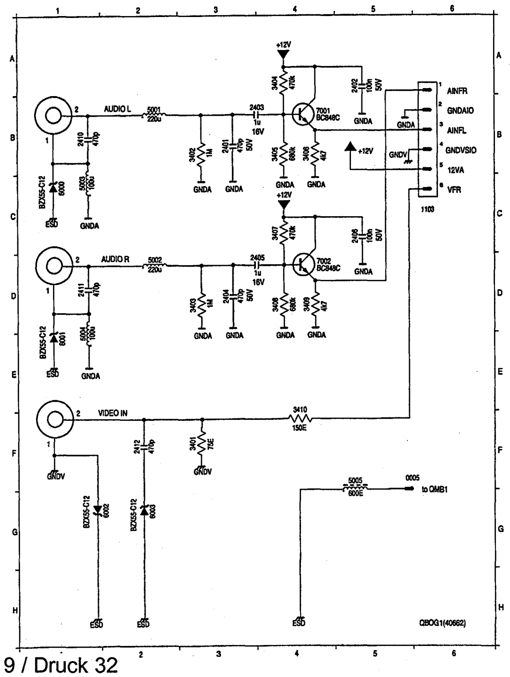
0005	F	5
1103	B	6
2401	B	3
2402	A	5
2403	A	3
2404	D	3
2405	C	3
2406	C	5
2410	B	1
2411	C	1
2412	E	2
3401	E	3
3402	B	3
3403	D	3
3404	A	4
3405	B	4
3406	B	4
3407	C	4
3408	D	4
3409	D	4
3410	E	4
3411	A	2
3412	C	2
5003	B	1
5004	D	1
5005	F	5
6000	B	1
6001	D	1
6002	F	2
6003	F	2
7001	A	4
7002	C	4


1103
QBOE1
97-02-27
Audio L
Audio R
Video In
1106
1107
1108
SOLDER DIRECTION

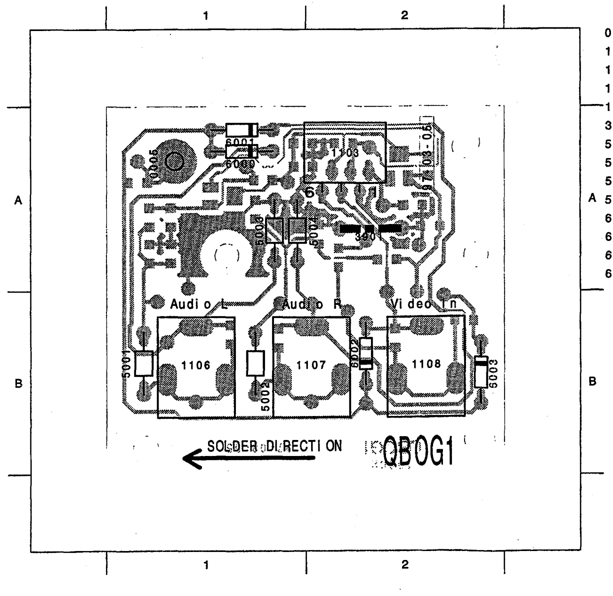
0005	A	2
1103	A	1
1106	B	1
1107	B	1
1108	B	2
3901	A	1
3902	A	2
5003	B	1
5004	B	1


1103
1106
1107
1108
40671
QBOE1
97 02 27

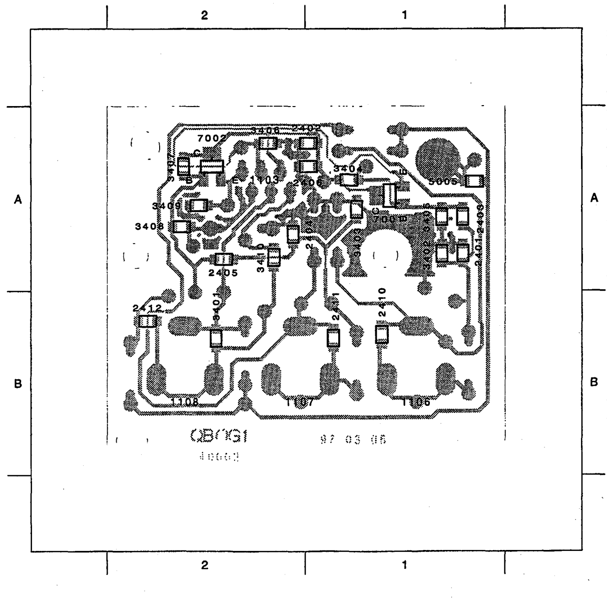
2401	A	1
2402	A	1
2403	A	1
2404	B	1
2405	B	2
2406	A	2
2410	B	1
2411	B	1
2412	A	2
3401	B	2
3402	A	1
3403	B	1
3404	A	1
3405	A	1
3406	A	2
3407	A	2
3408	A	1
3409	A	2
3410	A	2
3411	A	1
3412	B	1
3903	A	1
5005	A	2
6000	A	1
6001	B	2
6002	A	2
6003	A	2
7001	A	1
7002	A	2


AUDIO L
AUDIO R
VIDEO IN
AINFR
GNDAIO
AINFL
GNDVSIO
12VA
VFR
+12V
BC848C
BZX55-C12
to QMB1
QBOG1(40662)

0005	F	5
1103	C	6
2401	B	3
2402	A	5
2403	B	4
2404	D	3
2405	D	4
2406	C	5
2410	B	1
2411	D	1
2412	F	2
3401	F	3
3402	B	3
3403	D	3
3404	A	4
3405	B	4
3406	B	4
3407	C	4
3408	D	4
3409	D	4
3410	F	4
5001	B	2
5002	D	2
5003	C	1
5004	D	1
5005	F	5
6000	C	1
6001	E	1
6002	G	2
6003	G	2
7001	B	4
7002	D	4


1103
Audio L
Audio R
Video In
1106
1107
1108
SOLDER DIRECTION
QBOG1

0005	A	1
1103	A	2
1106	B	1
1107	B	1
1108	B	2
3901	A	2
5001	B	1
5002	B	1
5003	A	1
5004	A	1
6000	A	1
6001	A	1
6002	B	2
6003	B	2


1108
1107
1106
QBOG1
97 03 05

2401	A	1
2402	A	1
2403	A	1
2404	A	2
2405	A	2
2406	A	1
2410	B	1
2411	B	1
2412	B	2
3401	B	2
3402	A	1
3403	A	1
3404	A	1
3405	A	1
3406	A	2
3407	A	2
3408	A	2
3409	A	2
3410	A	2
5005	A	1
7001	A	1
7002	A	2

4. DRIVE ASSEMBLY

4.1 MECHANICAL PARTS LIST

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
1	Rec. protection lever (with spring)									402 10202
2	Chassis mounting spring (2x)									492 71022
5	Main brake left				P					
6	Main brake spring (2x)				P					
9	Damping roller *)									528 70782
10	Main brake right				P					
11	Tension arm spring									492 33317
12	Tension crank									403 70551
13	Slip ring						R			
14	Tension band				P					
15	Tension arm									403 70547
16	Erase head									249 10522
17	Swivelling gear						R			
18	Brake gear (2x)						R			
19	Swivelling plate						R			
20	Reel table (S)						R			
20a	Reel table (T)						R			
21	Headamplifier holder								T	
22	Bracket								T	
23	Roller unit left									528 70771
24	Loading arm left	B								
25	Loading arm right	B								
26	Roller unit right									528 70772
27	Loading gear	B								
30	Reverse clip					Q				
31	Reverse lever					Q				
32	Intermediate lever					Q				
33	Head disc 2/0									691 10583
33	Head disc 2/0-LP									691 10585
33	Head disc 4/0									691 10674
33	Head disc 4/0 Secam									691 21012
33	Head disc 4/2									691 10548
33	Head disc 4/2 Secam									691 10551
34	Scanner motor 2/0 (with screws)									361 10963
34	Scanner motor 4/0 (with screws)									361 10819
34	Scanner motor 4/2 (with screws)									361 10901
35	Cleaning roller									528 70773
36	A/C Head (with clip and screws)									249 10468
37	Pressure roller (with spring)									528 70774
38	Threading motor									361 10809
39	Threading belt									358 20421
40	Motor holder								T	
41	Pressure roller guide							S		
42	Reverse brake				P					
44	Slider gear	B						S		
45	Cam wheel							S		
46	Cam shaft							S		
47	Pulley shaft									528 81462
48	Worm shaft							S		
49	Chassis mounting clip								T	
50	WD-holder								T	

Pos.	Description	KITS								Code number 4822
		B	I	L	P	Q	R	S	T	
101	Cassette loader trigger			L						
102	Clip			L						
103	Cassette loader gear1			L						
104	Cassette loader spring			L						
105	Cassette loader gear2			L						
106	Spindle									535 93277
111	Cam wheel reverse	B								
112	Tension lever								T	
113	Cam wheel tension	B								
114	Clutch lever (with spring)									403 70549
115	Clutch									528 20736
116	Changing gear		I							
117	Double gear		I							
118	Light prism								T	
119	Init flap and holder								T	
120	Cam wheel lever								T	
121	S-VHS lever								T	
122	Prism rihgt								T	
123	Prism left								T	
125	Main slider								T	
126	Driving belt									358 31166
127	Capstan motor (with screws)									361 10805
129	Reverse kicker with transmission gears *)									522 20451
128	Gear pulley		I							
150	Lift									443 64112
KIT	B									310 31955
KIT	I									310 31963
KIT	L									310 32116
KIT	P									310 32191
KIT	Q									310 10658
KIT	R									310 10659
KIT	S									310 10661
KIT	T									310 10662

*) optional

Um eine hohen Reparaturstandard zu gewährleisten sind mit Ausnahme von Kit T immer alle im Kit enthaltenen Teile zu tauschen.

In order to guarantee a high repairstandard all spare parts included in a kit have to be replaced with the exception of kit T.

Per una riparazione garantita ocorre sostituire tutti i pezzi contenuti nei kit, fatta eccetione per il kit T.

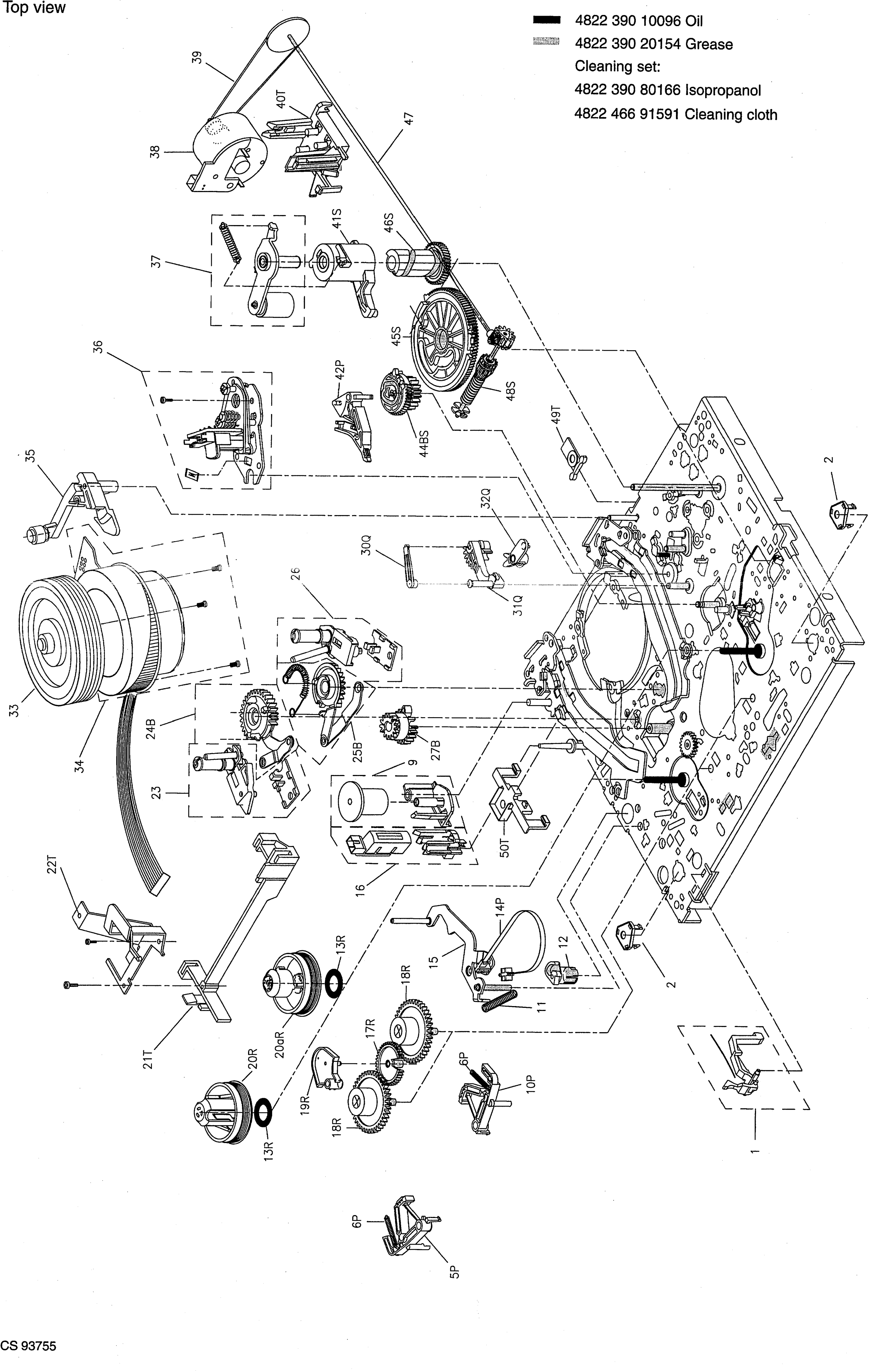
Para obtener un estandár de reparaciones elevado,es necesario cambiar todas las partes contenidas en el kit, la única exceptión es para el kit T.

A fin d'obtenir un standard de réparations élevé, toutes les pièces de rechange incluses dans un kit sont à remplacer, exception faite du kit T.

Om een hoge reparatiekwaliteit te waarbogen moeten, met uitzondering van kit T, altijd alle zich in een kit bevindende onderdelen worden vervangen.

4.2 Exploded view

Top view



■ 4822 390 10096 Oil

▨ 4822 390 20154 Grease

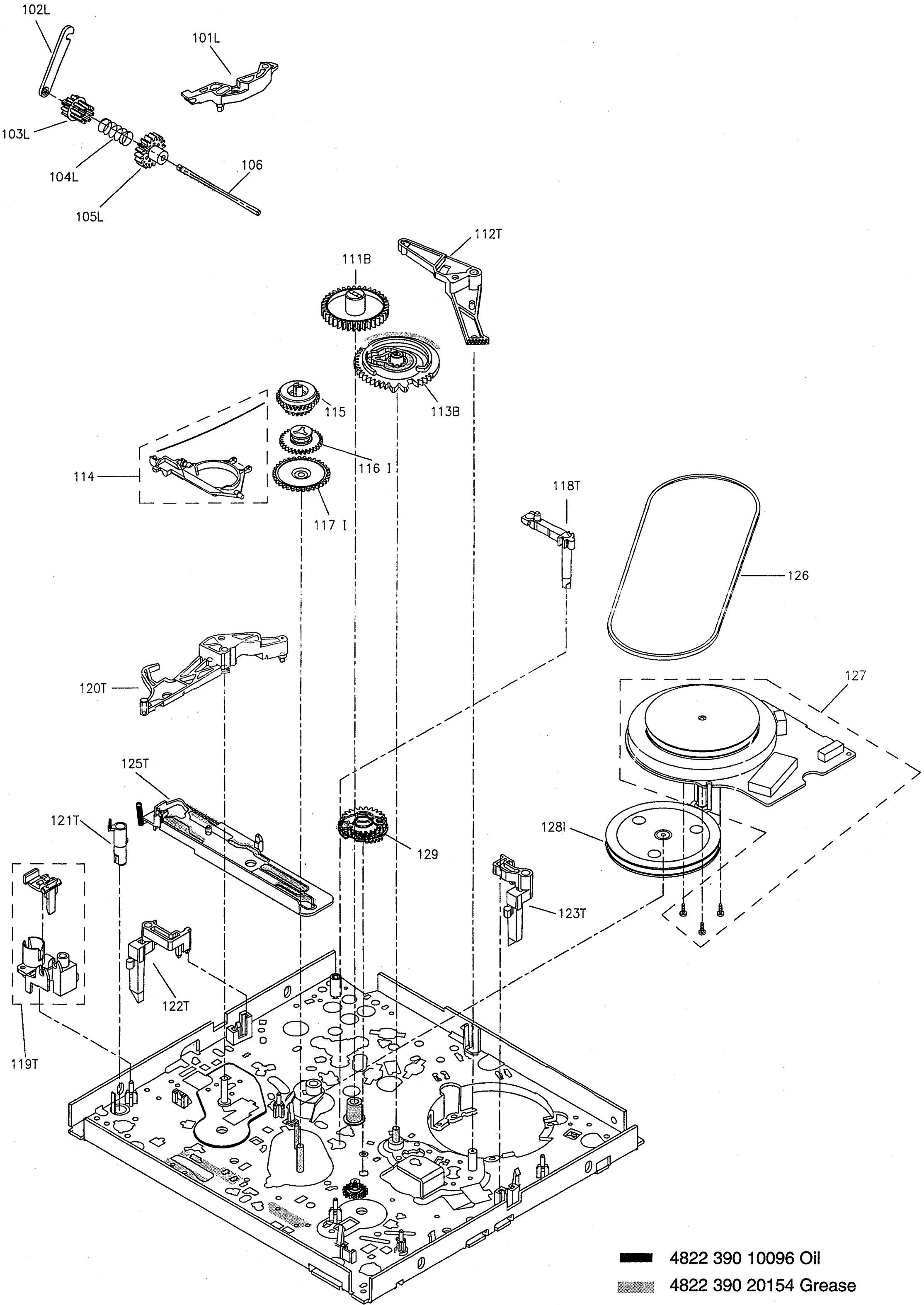
Cleaning set:

4822 390 80166 Isopropanol

4822 466 91591 Cleaning cloth

39
40T
47
38
41S
46S
37
45S
36
42P
48S
44BS
49T
35
32Q
2
30Q
26
31Q
33
34
24B
25B
27B
9
23
50T
16
22T
14P
12
15
13R
18R
2
11
20aR
21T
17R
6P
10P
20R
19R
18R
13R
1
6P
5P

Underside view


102L
101L
103L
104L
105L
106
112T
111B
113B
115
116 I
114
117 I
118T
126
120T
127
125T
121T
129
128I
123T
122T
119T

▬ 4822 390 10096 Oil

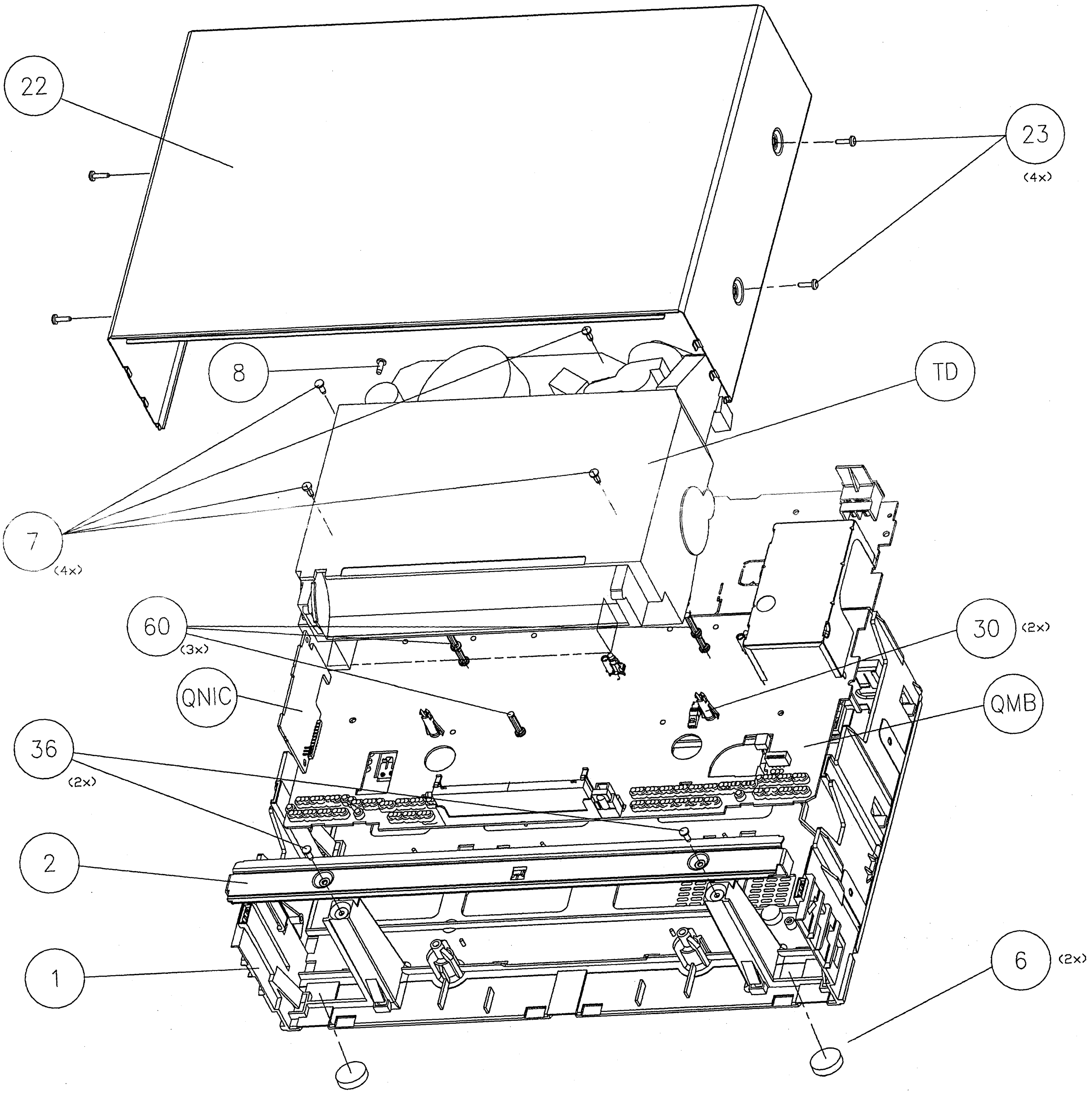
▨ 4822 390 20154 Grease

Cleaning set:

4822 390 80166 Isopropanol

4822 466 91591 Cleaning cloth

Exploded view set


22
23
(4x)
8
TD
7
(4x)
60
(3x)
30
(2x)
QNIC
QMB
36
(2x)
2
1
6
(2x)

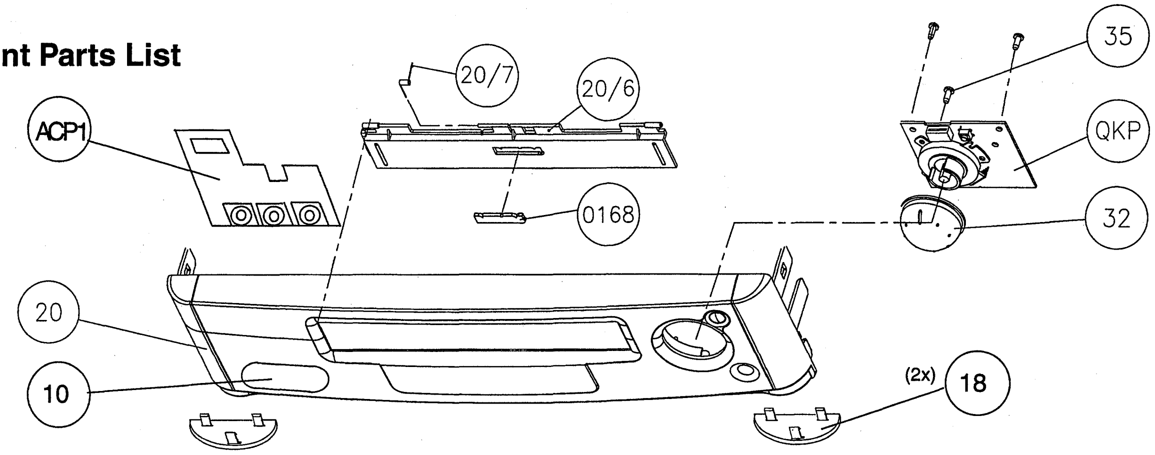
Set Parts List

Pos	Service code	Description
1	4822 464 10287	FRAME ASSY 1SCART SB110, SB115
	4822 464 10286	FRAME ASSY 2SCART VR28X, VR48X, SB215
	4822 464 10285	FRAME ASSY CINCH VR68X, SB615
2	4822 402 10709	BRACKET
6	4822 462 41806	FOOT FRAME
7	4822 502 13884	SCREW 3,5X16
8	4822 502 14431	SCREENING SCREW
22	4822 442 01371	COVER LACQUERED VRXXX
	4822 442 00887	COVER LACQUERED SBXXX
23	4822 502 14109	SCREW 3,5X10
30	4822 256 10198	DISTANCEHOLDER DECK
36	4822 502 11833	SCREW P2,9X12
60	4822 256 10359	DISTANCE HOLDER MOBO

Directions for use

Direction for use	Service code
VR285/02 DE,ES,FR,NL,IT,PT	4822 736 16116
VR285/02 GR	4822 736 16117
VR285/05 EN	4822 736 16115
VR285/07 EN	4822 736 16196
VR285/13 DA,FI,NO,SV	4822 736 16188
VR285/39 FR	4822 736 16153
VR285/58 EN,HU,PL,RU,SK,TS	4822 736 16145
VR286/02 DA,DE,ES,FI,FR,NL,NO,PT,SV	4822 736 16113
VR287/02 DE,FR,NL,IT,PT,ES	4822 736 16111
VR287/07 EN	4822 736 16109
VR287/13 DA,FI,NO,SV	4822 736 16187
VR287/39 FR	4822 736 16159
VR485/02 DA,DE,ES,FI,FR,GR,IT,NL,NO,P,SV	4822 736 16108
VR485/39 FR	4822 736 16107
VR485/58 EN,HU,PL,RU,SK,TS	4822 736 16106
VR487/02 DE,ES,FR, IT,PT	4822 736 16105
VR487/39 F	4822 736 16158
VR487/58 EN,HU,PL,RU,SK,TS	4822 736 16104
VR685/02 DE,FR,GR,IT,NL	4822 736 16156
VR685/07 EN	4822 736 16194
VR685/13 DA,FI,NO,SV	4822 736 16193
VR685/16 ES,FR,NL,PT	4822 736 16192
VR685/39 FR	4822 736 16191
VR685/58 EN,HU,PL,RU,SK,TS	4822 736 16189
VR686/02 DE,FR,NL,IT	4822 736 16103
VR686/13 DA,FI,NO,SV	4822 736 16157
VR686/39 FR	4822 736 16155
SB110/03 NL	4822 736 16121
SB115/03 NL	4822 736 16119
SB215/02 DA,DE,FI,NO,SV	4822 736 16195
SB615/03 NL	4822 736 16118
SB615/11 FR, NL	4822 736 16154

Front Parts List



Pos	Service code	Description
10	4822 442 01385	COVER CINCH FRONT
18	4822 462 11073	FOOT PANEL
20	4822 426 10641	CONTROL PANEL SB110/03
	4822 426 10639	CONTROL PANEL SB115/03
	4822 426 10662	CONTROL PANEL SB215/02
	4822 426 10638	CONTROL PANEL SB615/03
	4822 426 10647	CONTROL PANEL SB615/11
	4822 426 10367	CONTROL PANEL VR285/02, VR285/13
	4822 426 10635	CONTROL PANEL VR285/05, VR285/07
	4822 426 10646	CONTROL PANEL VR285/39
	4822 426 10634	CONTROL PANEL VR285/58
	4822 426 10633	CONTROL PANEL VR286/02
	4822 426 10632	CONTROL PANEL VR287/02, VR287/13
	4822 426 10631	CONTROL PANEL VR287/07
	4822 426 10653	CONTROL PANEL VR287/39
	4822 426 10629	CONTROL PANEL VR485/02
	4822 426 10628	CONTROL PANEL VR485/39
	4822 426 10627	CONTROL PANEL VR485/58
	4822 426 10626	CONTROL PANEL VR487/02, VR487/58
	4822 426 10652	CONTROL PANEL VR487/39
	4822 426 10649	CONTROL PANEL VR685/02
	4822 426 10661	CONTROL PANEL VR685/07
	4822 426 10659	CONTROL PANEL VR685/13, VR685/16, VR685/58
	4822 426 10658	CONTROL PANEL VR685/39
	4822 426 10625	CONTROL PANEL VR686/02
	4822 426 10651	CONTROL PANEL VR686/13
	4823 426 10648	CONTROL PANEL VR686/39
20/6	4822 443 10957	LIFT FLAP SB110/03
	4823 443 10956	LIFT FLAP SB115/03
	4824 443 10987	LIFT FLAP SB215/02
	4825 443 10955	LIFT FLAP SB615/03
	4826 443 10967	LIFT FLAP SB615/11
	4827 443 10954	LIFT FLAP VR285/02, VR285/05, VR285/07, VR285/13
	4828 443 10966	LIFT FLAP VR285/39
	4829 443 10954	LIFT FLAP VR285/58
	4830 443 10952	LIFT FLAP VR286/02
	4831 443 10951	LIFT FLAP VR287/02, VR287/07, VR287/13
	4832 443 10972	LIFT FLAP VR287/39
	4833 443 10949	LIFT FLAP VR485/02
	4834 443 10969	LIFT FLAP VR485/39
	4835 443 10949	LIFT FLAP VR485/58
	4836 443 10948	LIFT FLAP VR487/02
	4837 443 10971	LIFT FLAP VR487/39
	4838 443 10948	LIFT FLAP VR487/58
	4839 443 10968	LIFT FLAP VR685/02, VR685/07, VR685/13, VR685/16, VR685/58
	4840 443 10986	LIFT FLAP VR685/39
	4841 443 10947	LIFT FLAP VR686/02, VR686/13
	4842 443 10985	LIFT FLAP VR686/39
20/7	4822 492 70896	LEG SPRING
32	4822 410 11107	SHUTTLE KNOB VR686
	4822 410 11807	SHUTTLE KNOB VR287, VR487
35	4822 502 11839	SCREW 2,9X8
168	4822 459 11235	WORDMARK PHILIPS VRX86, VRX87
	4822 459 10886	WORDMARK PHILIPS VRX85
	4822 454 13207	WORDMARK PHILIPS SB215

Motherboard PAL, SECAM, MONO, STEREO

CONNECTORS

1001▲	4822 267 10577	MAINS PLUG
1002	4822 267 10498	CONN. 3p
1710	4822 265 30989	CONN. 3p
1711	4822 267 41062	CONN. 6p
1750	4822 267 10458	CONN. 3p
1908	4822 267 10584	CONN. 1p
1909	4822 267 10583	CONN. 1p
1911	4822 265 10938	CINCH 2p white
1912	4822 265 10939	CINCH 2p red
1915	4822 267 10364	CONN. 9p
1916	4822 267 41199	CONN. 5p
1917	4822 264 10345	SCART CONN. ORANGE
1918	4822 264 10346	SCART CONN. BLUE
1930	4822 267 41062	CONN. 6p
1944	4822 265 30989	CONN. 3p
1945	4822 267 51261	CONN. 8p
1946	4822 267 10366	CONN. 8p
1961	4822 267 31512	CONN. 7p
1962	5322 268 90415	CONN. 2p

MISCELLANEOUS

0005	4822 256 10355	DISPLAY HOLDER	
0007	4822 256 10195	HOLDER	
0008	4822 256 10196	HOLDER	
0020	4822 256 10197	HOLDER	
0021	4822 256 10197	HOLDER	
0022	4822 256 10197	HOLDER	
1000	4822 242 81067	Crystal 4.433 619 MHz	
1101	4822 276 13732	SWITCH TACT PUSH	
1103	4822 276 13732	SWITCH TACT PUSH	
1105	4822 276 13732	SWITCH TACT PUSH	
1107	4822 276 13732	SWITCH TACT PUSH	
1109	4822 276 13732	SWITCH TACT PUSH	
1110	4822 276 13732	SWITCH TACT PUSH	
1111	4822 276 13732	SWITCH TACT PUSH	
1113	4822 276 13732	SWITCH TACT PUSH	
1132	4822 276 13732	SWITCH TACT PUSH	
1134	4822 276 13732	SWITCH TACT PUSH	
1136	4822 276 13732	SWITCH TACT PUSH	
1140	4822 276 13732	SWITCH TACT PUSH	
1142	4822 276 13732	SWITCH TACT PUSH	
1143	4822 276 13732	SWITCH TACT PUSH	
1144	4822 276 13732	SWITCH TACT PUSH	
1145	4822 276 13732	SWITCH TACT PUSH	
1147	4822 276 13732	SWITCH TACT PUSH	
1148	4822 276 13732	SWITCH TACT PUSH	
1149	4822 276 13732	SWITCH TACT PUSH	
1154	4822 276 13732	SWITCH TACT PUSH	
1155	4822 276 13732	SWITCH TACT PUSH	
1178	4822 276 13732	SWITCH TACT PUSH	
1180	4822 276 13732	SWITCH TACT PUSH	
1181	4822 276 13732	SWITCH TACT PUSH	
1183	4822 276 13732	SWITCH TACT PUSH	
1185	4822 276 13732	SWITCH TACT PUSH	
1186	4822 276 13732	SWITCH TACT PUSH	
1187	4822 276 13732	SWITCH TACT PUSH	
1190	4822 276 13732	SWITCH TACT PUSH	
1192	4822 276 13732	SWITCH TACT PUSH	
1193	4822 276 13732	SWITCH TACT PUSH	
1220	4822 276 13732	SWITCH TACT PUSH	
1224	4822 276 13732	SWITCH TACT PUSH	
1226	4822 276 13732	SWITCH TACT PUSH	
1227	4822 276 13732	SWITCH TACT PUSH	
1228	4822 276 13732	SWITCH TACT PUSH	
1229	4822 276 13732	SWITCH TACT PUSH	
1230	4822 276 13732	SWITCH TACT PUSH	
1231	4822 276 13732	SWITCH TACT PUSH	
1232	4822 276 13732	SWITCH TACT PUSH	
1233	4822 276 13732	SWITCH TACT PUSH	
1234	4822 276 13732	SWITCH TACT PUSH	
1235	4822 276 13732	SWITCH TACT PUSH	
1236	4822 276 13732	SWITCH TACT PUSH	
1242	4822 276 13732	SWITCH TACT PUSH	
1297	5322 242 73682	Crystal 32,768 KHZ	
1298	4822 242 82114	Crystal 8,00 MHZ	
1350▲	4822 071 51001	Fuse 100 mA	
1351▲	4822 071 55001	Fuse 500 mA	
1352▲	4822 071 55001	Fuse 500 mA	
1353▲	4822 070 31252	Fuse 1.25 A	
1355▲	4822 071 51002	Fuse 1.0 A	
1356▲	4822 071 51002	Fuse 1.0 A	
1400	4822 242 82059	Crystal 10 MHZ	
1460	4822 277 11521	Switch	
1461	4822 277 11521	Switch	
1701	4822 210 10786	TP916MK2 (TMRG1-108A compatible)	PAL BG
1701	4822 210 10787	TMRG1-110A (TP944MK2, TMRB1102A comp.)	PAL I (IRL)
1701	4822 210 10784	TMRG1-203A	PAL GK
1701	4822 210 10785	TP926MK2 (TMRG2-104A compatible)	Booster SECAM
1719	4822 242 10688	OFWK9456M	SEC-LL'
1719	4822 242 10306	OFWK9463M	SEC-DK
1720	4822 242 81964	G1984	FM stereo PAL-G
1720	4822 242 81737	G1965	mono SEC
1720	4822 242 10307	OFWG3956M	SEC-DK
1720	4822 242 81436	OFWK3953M	stereo SEC
1721	4822 242 81388	OFWG1961M	mono PAL-G
1721	4822 242 81261	OFWG1966M	mono SEC-DK
1721	4822 242 10575	OFWJ1980M	PAL-I
1722	4822 242 10318	OFWL9360M	mono SEC-DK
1740	4822 242 72586	TPS 5,5MB-TF20	PAL-G
1740	4822 242 81572	TPS 6,0MB-TF21	PAL-I
1745	4822 242 70279	SFE 6,0MB	SEC-L, PAL-I
1745	4822 242 10428	EFCT5R5YS5A	PAL-G
1745	4822 242 10429	EFCT6R5YS5A	SEC-DK
1746	4822 242 10428	EFCT5R5YS5A	
1746	4822 242 10429	EFCT6R5YS5A	SEC-DK
1747	4822 242 10563	EFCT5R74YS5A	stereo FM
1748	4822 242 10754	EFCT6R25YS5A	stereo DK
1781	4822 242 82059	Crystal 10 MHZ	

CAPACITORS

2001	4822 126 10002	100nF20%Y5V	25V
2002	4822 122 33177	10nF 20% X7R	50V
2003	4822 126 10002	100nF20%Y5V	25V
2004	4822 122 33177	10nF 20% X7R	50V
2005	4822 124 23055	22µF20%	16V
2006	4822 126 13222	390pF 2% np0	63V
2007	5322 122 32966	39pF 5%np0	50V
2008	5322 122 32658	22pF 5%	50V
2009	4822 126 10002	100nF20%Y5V	25V
2010	4822 124 80987	220µF20%	6,3V
2011	4822 122 33177	10nF 20% X7R	50V
2012	4822 124 11569	4,7µF 20%	25V
2013	4822 126 10002	100nF20%Y5V	25V
2014	4822 124 80975	0,47µF20%	50V
2015	4822 126 10002	100nF20%Y5V	25V
2016	4822 126 10002	100nF20%Y5V	25V
2017	4822 124 22826	10µF	16V
2018	5322 122 32658	22pF 5%	50V
2019	4822 124 22826	10µF	16V
2020	4822 124 22826	10µF	16V
2021	4822 124 22826	10µF	16V
2022	4822 126 10002	100nF20%Y5V	25V
2023	4822 122 33177	10nF 20% X7R	50V
2024	4822 126 10002	100nF20%Y5V	25V
2025	4822 124 11568	47µF 20%	16V
2026	4822 122 33575	220pF 5%	50V
2027	4822 122 33177	10nF 20% X7R	50V
2028	4822 122 33177	10nF 20% X7R	50V
2029	4822 122 33177	10nF 20% X7R	50V
2030	4822 122 33177	10nF 20% X7R	50V
2031	4822 126 10002	100nF20%Y5V	25V

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

2032	4822 124 11568	47µF 20%	16V
2033	4822 126 10002	100nF20%Y5V	25V
2034	4822 122 33177	10nF 20% X7R	50V
2035	4822 122 33177	10nF 20% X7R	50V
2036	4822 122 33515	82pF 5%	63V
2037	4822 126 14124	220pF 2%	
2038	5322 122 32658	22pF 5%	50V
2038	5322 122 32139	12pF 2%	50V for 2 heads
2039	4822 124 23053	1µF20%	63V
2040	5322 122 32654	22nF10%X7R	63V
2041	4822 124 23053	1µF20%	63V
2042	4822 122 33797	47nF20%Y5V	50V
2043	4822 124 41969	1µF20%	50V
2044	4822 124 23053	1µF20%	63V
2045	4822 126 13196	100nF10%X7R	50V
2046	5322 122 34123	1nF10%X7R	50V
2048	5322 122 31873	2,7pF0,5%	100V
2047	4822 122 33177	10nF 20% X7R	50V
2049	4822 124 11568	47µF 20%	16V
2054	4822 124 41969	1µF20%	50V
2055	4822 122 33177	10nF 20% X7R	50V
2059	4822 124 23053	1µF20%	63V
2064	5322 122 31946	27pF 5%	63V
2066	4822 122 33177	10nF 20% X7R	50V
2080	5322 122 32658	22pF 5%	50V
2081	4822 122 33177	10nF 20% X7R	50V
2082	4822 122 33177	10nF 20% X7R	50V
2083	4822 122 33177	10nF 20% X7R	50V
2084	4822 122 33177	10nF 20% X7R	50V
2085	4822 126 10002	100nF20%Y5V	25V
2086	4822 124 11568	47µF 20%	16V
2087	4822 122 33177	10nF 20% X7R	50V
2100	4822 122 33177	10nF 20% X7R	50V
2101	5322 122 32531	100pF 5%	50V
2102	5322 122 32658	22pF 5%	50V
2103	5322 122 34123	1nF10%X7R	50V
2104	4822 122 33177	10nF 20% X7R	50V
2105	4822 122 33177	10nF 20% X7R	50V
2106	4822 122 33177	10nF 20% X7R	50V
2107	4822 122 33177	10nF 20% X7R	50V
2108	5322 122 33538	150pF 2%	63V
2109	5322 122 32481	15pF 5%	50V
2110	4822 126 10002	100nF20%Y5V	25V
2111	4822 126 13694	68pF 1%	63V
2112	4822 122 33177	10nF 20% X7R	50V
2113	4822 126 10002	100nF20%Y5V	25V
2115	4822 122 33575	220pF 5%	50V
2116	4822 122 33177	10nF 20% X7R	50V
2117	5322 122 34123	1nF10%X7R	50V
2118	5322 122 32659	33pF 5%	50V
2119	5322 122 32531	100pF 5%	50V for mstd /39
2119	4822 122 33797	47nF 20%	50V
2121	5322 122 34123	1nF10%X7R	50V
2122	4822 122 33177	10nF 20% X7R	50V
2123	4822 126 10002	100nF20%Y5V	25V
2124	4822 126 10002	100nF20%Y5V	25V
2125	4822 122 33515	82pF 5%	63V
2126	5322 122 31946	27pF 5%	63V
2128	4822 122 33515	82pF 5%	63V
2129	4822 122 33515	82pF 5%	63V
2130	4822 122 33575	220pF 5%	50V
2132	5322 122 32269	6,8pF 5%	50V
2133	5322 122 32452	47pF 5%	63V
2134	4822 122 33575	220pF 5%	50V
2135	5322 122 31946	27pF 5%	63V
2137	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2138	4822 116 10056	VDR 0805 1MA/ 8VMAX	
2150	4822 122 33177	10nF 20% X7R	50V
2151	4822 126 13061	220nF20% Y5V	25V
2152	4822 124 11568	47µF 20%	16V
2153	5322 122 32654	22nF 10% X7R	63V
2154	4822 122 33177	10nF 20% X7R	50V
2155	4822 122 33177	10nF 20% X7R	50V
2156	4822 122 33177	10nF 20% X7R	50V
2157	4822 122 33177	10nF 20% X7R	50V

2158	4822 122 33177	10nF 20% X7R	50V
2159	4822 122 33177	10nF 20% X7R	50V
2160	4822 122 33177	10nF 20% X7R	50V
2161	4822 122 33177	10nF 20% X7R	50V
2162	5322 122 32268	470pF 10%	50V
2163	5322 122 32531	100pF 5%	50V
2203	5322 122 32481	15pF 5%	50V
2204	5322 122 32481	15pF 5%	50V
2210	4822 122 33177	10nF 20% X7R	50V
2211	4822 124 81112	220µF20%	10V
2212	4822 126 13061	220nF20% Y5V	25V
2220	4822 124 23055	22µF20%	16V
2230	4822 122 33177	10nF 20% X7R	50V
2231	4822 122 33797	47nF20%Y5V	50V
2232	4822 122 33177	10nF 20% X7R	50V
2233	4822 122 33177	10nF 20% X7R	50V
2251	4822 126 10002	100nF20%Y5V	25V
2252	4822 126 10002	100nF20%Y5V	25V
2297	4822 124 11968	220mF +80-20%	5,5V
2300	4822 124 80407	1µF20%	50V
2301	4822 124 80407	1µF20%	50V
2302	4822 124 80407	1µF20%	50V
2308	5322 122 32531	100pF 5%	50V
2310	4822 126 10002	100nF20%Y5V	25V
2311	4822 122 33177	10nF 20% X7R	50V
2313	4822 122 33575	220pF 5%	50V
2314	4822 126 10002	100nF20%Y5V	25V
2315	4822 122 33177	10nF 20% X7R	50V
2316	4822 122 33797	47nF20%Y5V	50V
2317	5322 122 32654	22nF10%X7R	63V
2318	4822 124 22263	220µF20%	25V
2319	5322 122 32654	22nF10%X7R	63V
2320	5322 122 32654	22nF10%X7R	63V
2350	4822 126 14125	470pF 2%	
2353	4822 126 13196	100nF10% X7R	25V
2354	4822 126 10002	100nF20%Y5V	25V
2355	5322 122 34123	1nF10%X7R	50V
2356	4822 124 23053	1µF20%	63V
2357▲	4822 126 13841	1nF 20%	250V
2358	4822 126 10002	100nF20%Y5V	25V
2359	4822 126 13061	220nF20% Y5V	25V
2360▲	4822 121 10667	68nF 20%	275V
2361	4822 124 22864	47µF	50V
2362▲	4822 124 11969	22µF 20%	400V
2363	4822 124 22864	47µF	50V
2364	4822 124 11899	220µF 20%	25V
2365	4822 124 11971	470µF 20%	16V
2366	4822 126 14126	47pF 5%	2KV
2367	4822 124 11899	220µF 20%	25V
2368	4822 122 31175	1nF 10%	500V
2369	4822 126 10002	100nF20%Y5V	25V
2370	4822 124 23052	100µF20%	16V
2371	4822 124 11971	470µF 20%	16V
2372	4822 126 13061	220nF20% Y5V	25V
2373	4822 124 11486	220µF 20%	16V
2374	4822 124 11971	470µF 20%	16V
2375	4822 121 42004	10nF 10%	400V
2376	4822 124 22833	10µF	50V
2378	4822 121 42004	10nF 10%	400V
2379	5322 126 10223	4,7nF10%X7R	63V
2385	4822 124 11486	220µF 20%	16V
2386	5322 122 32268	470pF 10%	50V
2400	4822 122 33177	10nF 20% X7R	50V
2401	4822 124 23055	22µF20%	16V
2403	5322 122 32658	22pF 5%	50V
2404	5322 122 32658	22pF 5%	50V
2416	4822 126 10002	100nF20%Y5V	25V
2417	4822 124 81295	47µF20%	6,3V
2440	4822 124 81029	100µF20%	25V
2441	4822 126 10002	100nF20%Y5V	25V
2442	4822 122 33177	10nF 20% X7R	50V
2455	4822 122 33175	2,2nF 20% X7R	50V
2459	4822 124 22263	220µF20%	25V
2461	5322 126 10223	4,7nF10%X7R	63V
2463	4822 124 23027	47µF	6.3V

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

2464	5322 126 10223	4,7nF10%X7R	63V	
2465	4822 122 33175	2,2nF 20% X7R	50V	
2466	4822 124 23027	47µF	6.3V	
2467	4822 122 33342	33nF10%X7R	63V	
2468	4822 126 10002	100nF20%Y5V	25V	
2470	4822 122 33177	10nF 20% X7R	50V	
2471	4822 122 33177	10nF 20% X7R	50V	
2472	5322 122 32531	100pF 5%	50V	
2473	5322 122 32531	100pF 5%	50V	
2474	5322 122 32531	100pF 5%	50V	
2501	4822 126 10002	100nF20%Y5V	25V	
2502	4822 124 22826	10µF	16V	
2503	4822 124 22826	10µF	16V	
2504	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2504	5322 122 32268	470pF 10%	50V	for mono
2505	5322 122 32268	470pF 10%	50V	for mono
2505	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2506	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2506	5322 122 32268	470pF 10%	50V	for mono
2507	4822 116 10056	VDR 0805 1MA/ 8VMAX		
2508	4822 126 10002	100nF20%Y5V	25V	
2509	5322 122 32268	470pF 10%	50V	for mono
2509	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2510	5322 122 32268	470pF 10%	50V	for mono
2510	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2511	4822 116 10056	VDR 0805 1MA/ 8VMAX		for stereo
2511	5322 122 32268	470pF 10%	50V	for mono
2512	4822 116 10056	VDR 0805 1MA/ 8VMAX		
2514	4822 124 23027	47µF	6.3V	
2515	4822 126 10002	100nF20%Y5V	25V	
2516	4822 124 11568	47µF 20%	16V	
2517	4822 126 10002	100nF20%Y5V	25V	
2519	4822 126 10002	100nF20%Y5V	25V	
2520	4822 126 10002	100nF20%Y5V	25V	
2521	4822 126 10002	100nF20%Y5V	25V	
2523	4822 126 10002	100nF20%Y5V	25V	
2524	4822 126 10002	100nF20%Y5V	25V	
2525	4822 126 10002	100nF20%Y5V	25V	
2526	4822 126 10002	100nF20%Y5V	25V	
2527	4822 126 10002	100nF20%Y5V	25V	
2530	4822 126 13061	220nF20% Y5V	25V	
2540	4822 126 10002	100nF20%Y5V	25V	
2541	4822 122 33175	2,2nF 20% X7R	50V	
2542	4822 122 33342	33nF10%X7R	63V	
2543	4822 126 13482	470nF80/20%	16V	
2545	4822 126 10002	100nF20%Y5V	25V	
2600	5322 126 10184	680p 5%	50V	
2601	4822 122 33175	2,2nF 20% X7R	50V	
2602	4822 124 22826	10µF	16V	
2603	4822 122 33177	10nF 20% X7R	50V	
2604	4822 124 22739	100µF	50V	for mono
2604	4822 124 22826	10µF	16V	for stereo
2605	5322 122 34123	1nF10%X7R	50V	
2606	4822 126 10002	100nF20%Y5V	25V	
2608	4822 122 33177	10nF 20% X7R	50V	
2617	4822 124 11568	47µF 20%	16V	
2618	5322 122 31863	330pF 5%	50V	
2619	4822 124 11568	47µF 20%	16V	
2620	4822 121 51655	47nF	50V	
2621	5322 122 34123	1nF10%X7R	50V	
2622	4822 121 43873	27nF 5%	50V	
2646	4822 126 13482	470nF80/20%	16V	
2647	4822 126 10002	100nF20%Y5V	25V	
2648	4822 124 23055	22µF20%	16V	
2650	4822 126 10002	100nF20%Y5V	25V	
2651	4822 124 11568	47µF 20%	16V	
2652	4822 124 22826	10µF	16V	
2656	4822 126 14127	39nF 10%	50V	
2657	4822 122 33128	15nF10%X7R	63V	
2700	4822 126 10002	100nF20%Y5V	25V	
2701	4822 126 10002	100nF20%Y5V	25V	
2702	4822 126 10002	100nF20%Y5V	25V	
2704	4822 124 23052	100µF20%	16V	
2705	5322 122 32268	470pF 10%	50V	
2706	4822 122 33575	220pF 5%	50V	

2707	5322 122 33861	120pF10%	50V
2708	4822 124 23055	22µF20%	16V
2709	4822 126 10002	100nF20%Y5V	25V
2715	5322 122 32661	56pF 5%	50V
2716	5322 122 32661	56pF 5%	50V
2722	5322 122 34123	1nF10%X7R	50V
2723	4822 122 33177	10nF 20% X7R	50V
2726	4822 126 12104	12nF 5%X7R	63V
2727	4822 124 23055	22µF20%	16V
2728	4822 124 23055	22µF20%	16V
2729	4822 122 33177	10nF 20% X7R	50V
2730	5322 122 32452	47pF 5%	63V
2731	5322 122 32452	47pF 5%	63V
2732	5322 122 32452	47pF 5%	63V
2733	4822 122 33177	10nF 20% X7R	50V
2734	4822 126 10002	100nF20%Y5V	25V
2735	5322 122 32452	47pF 5%	63V
2740	4822 124 41576	2,2µF 20%	50V
2741	4822 126 10002	100nF20%Y5V	25V
2742	4822 124 23055	22µF20%	16V
2743	4822 126 13061	220nF20% Y5V	25V
2744	4822 124 40786	2,2µF20%	63V
2745	4822 122 33575	220pF 5%	50V
2746	4822 126 10002	100nF20%Y5V	25V
2747	4822 126 10002	100nF20%Y5V	25V
2748	4822 126 12945	8,2pF 2%	
2749	4822 126 13061	220nF20% Y5V	25V
2750	4822 124 40786	2,2µF20%	63V
2752	4822 126 13061	220nF20% Y5V	25V
2780	4822 124 22826	10µF	16V
2781	4822 122 33177	10nF 20% X7R	50V
2782	4822 126 10002	100nF20%Y5V	25V
2783	5322 126 10184	680p 5%	50V
2784	4822 124 11568	47µF 20%	16V
2785	5322 122 32531	100pF 5%	50V
2786	4822 124 11569	4,7µF 20%	25V
2787	4822 124 11569	4,7µF 20%	25V
2788	5322 122 32654	22nF10% X7R	63V
2789	4822 122 33177	10nF 20% X7R	50V
2790	4822 122 33177	10nF 20% X7R	50V
2791	4822 124 11569	4,7µF 20%	25V
2792	4822 124 11569	4,7µF 20%	25V
2793	5322 122 32481	15pF 5%	50V
2794	4822 126 10002	100nF20%Y5V	25V
2795	5322 122 34123	1nF10%X7R	50V
2796	4822 124 11569	4,7µF 20%	25V
2800	4822 126 13689	18pF 1%	63V
2801	5322 122 32659	33pF 5%	50V
2802	4822 126 14118	100nF -20+80%	50V
2802	4822 126 10002	100nF20%Y5V	25V
2803	4822 126 10002	100nF20%Y5V	25V
2804	4822 124 23053	1µF20%	63V
2805	4822 124 23027	47µF	6.3V
2810	5322 122 33861	120pF10%	50V
2811	5322 122 32531	100pF 5%	50V
2829	4822 122 33177	10nF 20% X7R	50V
2831	5322 122 32481	15pF 5%	50V
2850	4822 124 23052	100µF20%	16V
2851	5322 122 32654	22nF10% X7R	63V
2852	4822 124 23052	100µF20%	16V
2853	5322 122 32654	22nF10% X7R	63V
2854	4822 124 40786	2,2µF20%	63V
2855	5322 122 32654	22nF10% X7R	63V
2856	5322 122 32654	22nF10% X7R	63V
2857	4822 126 13061	220nF20% Y5V	25V
2858	4822 126 13061	220nF20% Y5V	25V
2859	4822 126 13061	220nF20% Y5V	25V
2860	4822 126 13061	220nF20% Y5V	25V
2861	4822 126 13061	220nF20% Y5V	25V
2862	4822 126 13061	220nF20% Y5V	25V
2863	4822 126 13061	220nF20% Y5V	25V
2864	4822 126 13061	220nF20% Y5V	25V
2865	5322 126 10223	4,7nF10%X7R	63V
2866	4822 124 11568	47µF 20%	16V
2867	4822 124 22826	10µF	16V

Motherboard PAL, SECAM, MONO, STEREO

2868	4822 126 13061	220nF20% Y5V	25V
2869	5322 126 10223	4,7nF10%X7R	63V
2870	4822 124 11568	47µF 20%	16V
2871	4822 124 22826	10µF	16V
2872	4822 124 22826	10µF	16V
2873	4822 124 22826	10µF	16V
2874	4822 124 22826	10µF	16V
2875	4822 124 22826	10µF	16V
2876	4822 124 22826	10µF	16V
2877	4822 124 22826	10µF	16V
2880	4822 124 22826	10µF	16V
2881	4822 124 22826	10µF	16V
2882	5322 126 10223	4,7nF10%X7R	63V
2883	5322 116 80853	560pF 5%	63V
2884	5322 126 10223	4,7nF10%X7R	63V
2885	5322 116 80853	560pF 5%	63V
2888	4822 124 22826	10µF	16V
2889	4822 126 10002	100nF20%Y5V	25V

RESISTORS

3000	4822 051 10102	1K00	2%	0,25W	
3001	4822 051 10102	1K00	2%	0,25W	
3002	4822 116 52228	680E	5%	0,5W	
3003	4822 116 52228	680E	5%	0,5W	
3004	4822 116 52228	680E	5%	0,5W	
3005	4822 116 52303	8K2	5%	0,5W	
3006	4822 116 52238	12K	5%	0,5W	
3007	4822 100 12157	10K	30%	POT	
3008	4822 116 83883	470E	5%	0,5W	
3010	4822 051 10102	1K00	2%	0,25W	
3011	4822 117 11449	2K2	1%	0,1W	
3012	4822 117 11449	2K2	1%	0,1W	
3013	4822 117 11721	1K3	2%	0.1W	
3014	4822 116 83903	4K7	2%	0.1W	
3015	4822 051 10102	1K00	2%	0,25W	
3016	4822 051 20822	8K20	5%	0,1W	
3017	4822 116 52249	1K8	5%	0,5W	
3018	4822 116 83883	470E	5%	0,5W	
3019	4822 051 20562	5K60	5%	0,1W	
3020	4822 051 20224	220K0	5%	0,1W	
3021	4822 050 11002	1K00	1%	0,4W	
3022	4822 050 11002	1K00	1%	0,4W	
3024	4822 051 20822	8K20	1%	0,1W	
3024	4822 051 20682	6K80	5%	0,1W	for 2/x
3027	4822 116 52264	27K	5%	0,5W	
3028	4822 051 20562	5K60	5%	0,1W	for 1 scart
3028	4822 051 20332	3K30	5%	0,1W	for 2 scart
3029	4822 051 20225	2M20	5%	0,1W	
3030	4822 116 52256	2K2	5%	0,5W	
3031	4822 116 52256	2K2	5%	0,5W	
3032	4822 117 11449	2K2	1%	0,1W	
3033	4822 117 10965	18K	5%	0,5W	
3034	4822 051 20153	15K00	5%	0,1W	
3035	4822 117 11449	2K2	1%	0,1W	
3036	4822 051 20471	470R0	5%	0,1W	
3045	4822 116 83876	270E	5%	0,5W	
3046	4822 050 11002	1K00	1%	0,4W	
3048	4822 116 83884	47K	5%	0,5W	
3050	4822 116 83872	220R	5%	0,5W	for mstd
3050	4822 116 52175	100E	5%	0,5W	
3051	4822 051 20224	220K0	5%	0,1W	
3052	4822 116 52175	100E	5%	0,5W	
3054	4822 117 11449	2K2	1%	0,1W	
3055	4822 117 10361	680R	1%	0,1W	
3080	4822 051 20568	5R60	5%	0,1W	
3081	4822 051 20561	560R0	5%	0,1W	
3082	4822 051 20471	470R0	5%	0,1W	
3083	4822 051 20472	4K70	5%	0,1W	
3084	4822 051 20472	4K70	5%	0,1W	
3085	4822 051 20112	1K10	5%	0,1W	
3086	4822 051 20331	330R0	5%	0,1W	
3087	4822 116 52234	100K	5%	0,5W	
3089	4822 051 20561	560R0	5%	0,1W	
3100	4822 116 52219	330E	5%	0,5W	
3101	4822 051 20332	3K30	5%	0,1W	
3102	4822 116 52231	820E	5%	0,5W	
3103	4822 116 52228	680E	5%	0,5W	
3104	4822 050 11002	1K00	1%	0,4W	
3105	4822 116 52222	390E	5%	0,5W	
3106	4822 116 52226	560E	5%	0,5W	
3107	4822 050 11002	1K00	1%	0,4W	
3109	4822 116 52195	47E	5%	0,5W	
3110	4822 116 52207	1K2	5%	0,5W	
3111	4822 116 52256	2K2	5%	0,5W	
3112	4822 051 10102	1K00	2%	0,25W	
3113	4822 051 20561	560R0	5%	0,1W	
3114	4822 117 10833	10K	1%	0,1W	
3115	4822 116 52251	18K	5%	0,5W	
3116	4822 051 10102	1K00	2%	0,25W	
3117	4822 116 52256	2K2	5%	0,5W	
3118	4822 116 52283	4K7	5%	0,5W	
3119	4822 116 52271	33K	5%	0,5W	
3120	4822 116 52303	8K20	5%	0,5W	
3121	4822 051 20182	1K80	5%	0,1W	
3122	4822 051 10102	1K00	2%	0,25W	
3123	4822 116 83864	10K	5%	0,5W	
3124	4822 116 52243	1K5	5%	0,5W	
3125	4822 117 11449	2K2	1%	0,1W	
3126	4822 051 10102	1K00	2%	0,25W	
3127	4822 117 11449	2K2	1%	0,1W	
3128	4822 117 11449	2K2	1%	0,1W	
3129	4822 051 10102	1K00	2%	0,25W	
3134	4822 117 11503	220R	1%	0.1W	
3135	4822 117 11503	220R	1%	0.1W	
3151	4822 051 20104	100K00	5%	0,1W	
3152	4822 051 20393	39K00	5%	0,1W	
3153	4822 117 10833	10K	1%	0,1W	
3154	4822 117 12605	27K	1%	0,1W	for 4/2
3154	4822 117 10354	22K	1%	0,1W	for 4/0
3154	4822 117 12141	14K	1%	0,1W	for 3/0
3154	4822 117 12342	18K	1%	0,1W	for 2/x
3155	4822 117 11383	12K	1%	0,1W	for 2/x
3155	4822 051 20153	15K00	5%	0,1W	for 4/x
3156	4822 051 20331	330R00	5%	0,1W	
3157	4822 051 20331	330R00	5%	0,1W	
3158	4822 051 20472	4K70	5%	0,1W	
3159	4822 100 12157	10K	30%	POT	
3160	4822 100 12157	10K	30%	POT	
3162	4822 051 20008	0R00 JUMP (0805)			
3163	4822 051 20008	0R00 JUMP (0805)			
3164	4822 051 20008	0R00 JUMP (0805)			
3165	4822 051 20008	0R00 JUMP (0805)			
3228	4822 116 83872	220E	5%	0,5W	
3229	4822 117 10833	10K	1%	0,1W	
3230	4822 117 10833	10K	1%	0,1W	
3231	4822 116 52175	100E	5%	0,5W	
3232	4822 051 20101	100E	5%	0,5W	
3233	4822 116 83864	10K	5%	0,5W	
3234	4822 116 83864	10K	5%	0,5W	
3235	4822 116 83864	10K	5%	0,5W	
3238	4822 116 83864	10K	5%	0,5W	
3240	4822 116 52297	68K	5%	0,5W	
3241	4822 051 20683	68K00	5%	0,1W	
3242	4822 051 20683	68K00	5%	0,1W	
3243	4822 051 20683	68K00	5%	0,1W	
3244	4822 050 11002	1K00	1%	0,4W	
3245	4822 051 20183	18K00	5%	0,1W	
3250	4822 051 20153	15K00	5%	0,1W	
3252▲	4822 117 11593	22E	5%		
3253	4822 050 24708	4R70	1%	0,6W	
3254	4822 050 24708	4R70	1%	0,6W	
3265	4822 116 83864	10K	5%	0,5W	
3270	4822 117 11503	220R	1%	0.1W	
3271	4822 117 11503	220R	1%	0.1W	
3273	4822 117 11503	220R	1%	0.1W	
3297	4822 051 20562	5K60	5%	0,1W	
3300	4822 116 52175	100E	5%	0,5W	
3301	4822 116 52175	100E	5%	0,5W	

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

3302	4822 116 52175	100E	5%	0,5W	
3303	4822 116 83883	470E	5%	0,5W	
3304	4822 050 11002	1K00	1%	0,4W	
3305	4822 116 52283	4K7	5%	0,5W	
3312	4822 116 52249	1K8	5%	0,5W	
3313	4822 116 83884	47K	5%	0,5W	
3350	4822 117 10833	10K	1%	0,1W	
3351	4822 051 20223	22K00	5%	0,1W	
3352	4822 051 20562	5K60	5%	0,1W	
3353	4822 117 10833	10K	1%	0,1W	
3354	4822 117 11449	2K2	1%	0,1W	
3355	4822 051 20822	8K20	5%	0,1W	
3356	4822 051 20223	22K00	5%	0,1W	
3357	4822 051 20472	4K70	5%	0,1W	
3358	4822 117 11149	82K	1%	0,1W	
3359	4822 051 20471	470R00	5%	0,1W	
3360	4822 051 20689	68R00	5%	0,1W	
3361⚠	4822 052 10479	47R00	5%	0,33W	
3362	4822 051 20472	4K70	5%	0,1W	
3363	4822 050 21208	1R20	1%	0,6W	
3365	4822 116 83874	220K	5%	0,5W	
3369	4822 116 83882	39K	5%	0,5W	
3370	4822 116 83882	39K	5%	0,5W	
3374	4822 051 20271	270R00	5%	0,1W	
3375	4822 051 10102	1K00	2%	0,25W	
3376	4822 051 20008	0R00 JUMP (0805)			
3377	4822 051 20472	4K70	5%	0,1W	
3378	4822 051 20272	2K70	5%	0,1W	
3379	4822 101 11383	470E	30%	POT	
3380	4822 051 10102	1K00	2%	0,25W	
3381	4822 051 20104	100K00	5%	0,1W	
3382	4822 117 10833	10K	1%	0,1W	
3383	4822 116 83874	220K	5%	0,5W	
3384⚠	4822 052 10101	100R00	5%	0,33W	
3385	4822 116 52269	3K30	1%	0,4W	
3386	4822 116 52219	330R00	1%	0,4W	
3387	4822 116 52226	560R00	5%	0,5W	
3387	4822 116 83883	470R00	5%	0,5W	for stereo
3388	4822 116 52226	560R00	5%	0,5W	
3388	4822 116 83883	470R00	5%	0,5W	for stereo
3389	4822 117 11449	2K2	1%	0,1W	
3390	4822 051 20224	220K00	5%	0,1W	
3391	4822 051 20224	220K00	5%	0,1W	
3392⚠	4822 053 21335	3M30	5%	0,5W	
3393⚠	4822 053 21335	3M30	5%	0,5W	
3394	4822 116 52256	2K2	5%	0,5W	
3395	4822 116 52257	22K	5%	0,5W	
3396	4822 116 52257	22K	5%	0,5W	
3397	4822 051 20101	100E	5%	0,5W	
3398	4822 051 20101	100E	5%	0,5W	
3400	4822 116 83864	10K	5%	0,5W	
3401	4822 116 83864	10K	5%	0,5W	
3402	4822 050 11002	1K00	1%	0,4W	
3403	4822 116 52256	2K2	5%	0,5W	
3404	4822 116 83864	10K	5%	0,5W	
3405	4822 116 83876	270E	5%	0,5W	
3406	4822 116 83864	10K	5%	0,5W	
3407	4822 116 83864	10K	5%	0,5W	
3408	4822 116 52256	2K2	5%	0,5W	
3410	4822 051 20472	4K70	5%	0,1W	
3411	4822 116 83864	10K	5%	0,5W	
3412	4822 116 52249	1K8	5%	0,5W	
3413	4822 050 11002	1K00	1%	0,4W	
3414⚠	4822 052 10109	10R00	5%	0,33W	
3415⚠	4822 052 10109	10R00	5%	0,33W	
3416	4822 116 52257	22K	5%	0,5W	
3417	4822 116 52283	4K7	5%	0,5W	
3418	4822 050 11002	1K00	1%	0,4W	
3419	4822 051 20472	4K70	5%	0,1W	
3420	4822 117 10833	10K	1%	0,1W	
3421	4822 116 83864	10K	5%	0,5W	
3423	4822 116 83876	270R	5%	0,5W	
3424	4822 116 52256	2K2	5%	0,5W	
3430	4822 116 52249	1K8	5%	0,5W	
3431	4822 116 52276	3K9	5%	0,5W	

3432	4822 116 83864	10K	5%	0,5W
3433	4822 116 52256	2K2	5%	0,5W
3434	4822 116 52257	22K	5%	0,5W
3435	4822 116 83864	10K	5%	0,5W
3436	4822 050 11002	1K00	1%	0,4W
3437	4822 116 83961	6K8	5%	0,5W
3438	4822 051 20472	4K70	5%	0,1W
3440⚠	4822 052 10228	2R20	5%	0,33W
3441	4822 116 80176	1E	5%	0,5W
3442	4822 116 52304	82K	5%	0,5W
3443	4822 116 52257	22K	5%	0,5W
3444	4822 116 52276	3K9	5%	0,5W
3445	4822 116 83864	10K	5%	0,5W
3446	4822 116 52257	22K	5%	0,5W
3447	4822 116 52257	22K	5%	0,5W
3448	4822 116 83864	10K	5%	0,5W
3449	4822 117 10833	10K	1%	0,1W
3450	4822 116 52256	2K2	5%	0,5W
3451	4822 116 83864	10K	5%	0,5W
3452	4822 116 52249	1K8	5%	0,5W
3453	4822 116 52283	4K7	5%	0,5W
3454	4822 116 52283	4K7	5%	0,5W
3455	4822 116 52283	4K7	5%	0,5W
3456	4822 117 10833	10K	1%	0,1W
3457	4822 050 11002	1K00	1%	0,4W
3458	4822 051 20223	22K00	5%	0,1W
3459	4822 116 83876	270E	5%	0,5W
3460	4822 116 83884	47K	5%	0,5W
3461	4822 051 20472	4K70	5%	0,1W
3462	4822 051 20563	56K00	5%	0,1W
3463	4822 116 52283	4K7	5%	0,5W
3464	4822 116 52256	2K2	5%	0,5W
3466	4822 116 83864	10K	5%	0,5W
3469	4822 116 83876	270E	5%	0,5W
3470	4822 116 52264	27K	5%	0,5W
3471	4822 116 52222	390E	5%	0,5W
3472	4822 116 52264	27K	5%	0,5W
3473	4822 116 52222	390E	5%	0,5W
3474	4822 116 83864	10K	5%	0,5W
3475	4822 116 52289	5K6	5%	0,5W
3476	4822 116 52222	390E	5%	0,5W
3477	4822 116 52283	4K7	5%	0,5W
3478	4822 051 20104	100K00	5%	0,1W
3479	4822 116 52283	4K7	5%	0,5W
3480	4822 116 83884	47K	5%	0,5W
3481	4822 116 52256	2K2	5%	0,5W
3482	4822 116 52257	22K	5%	0,5W
3483	4822 116 83864	10K	5%	0,5W
3484	4822 116 52283	4K7	5%	0,5W
3488	4822 051 20471	470R00	5%	0,1W
3489	4822 116 52283	4K7	5%	0,5W
3490	4822 116 83872	220R	5%	0,5W
3491	4822 116 83884	47K	5%	0,5W
3492	4822 051 20473	47K00	5%	0,1W
3493	4822 051 20225	2M20	5%	0,1W
3494	4822 051 20104	100K00	5%	0,1W
3495	4822 051 20104	100K00	5%	0,1W
3496	4822 051 20472	4K70	5%	0,1W
3497	4822 051 20472	4K70	5%	0,1W
3498	4822 051 20472	4K70	5%	0,1W
3499	4822 116 52283	4K7	5%	0,5W
3501	4822 051 10102	1K00	2%	0,25W
3502	4822 051 10102	1K00	2%	0,25W
3503	4822 051 10102	1K00	2%	0,25W
3505	4822 051 20759	75R00	5%	0,1W
3509	4822 051 20008	0R00 JUMP (0805)		
3510	4822 051 20008	0R00 JUMP (0805)		
3512	4822 051 20682	6K80	5%	0,1W
3513	4822 116 83872	220E	5%	0,5W
3514	4822 116 83961	6K80	5%	
3515	4822 051 20682	6K80	5%	0,1W
3516	4822 117 11503	220R	1%	0.1W
3517	4822 116 52234	100K	5%	0,5W
3518	4822 116 52234	100K	5%	0,5W
3519	4822 051 20822	8K20	5%	0,1W

⚠... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

3520	4822 117 10353	150R	1%	0,1W	
3521	4822 116 83961	6K8	5%		
3522	4822 051 20821	820R00	5%	0,1W	
3523	4822 051 20008	0R00 JUMP (0805)			
3524	4822 051 20759	75R00	5%	0,1W	
3525	4822 051 20822	8K20	5%	0,1W	
3526	4822 117 11449	2K20	1%	0,1W	
3527	4822 051 20472	4K70	5%	0,1W	
3528	4822 116 83884	47K	5%	0,5W	
3529	4822 051 20759	75R00	5%	0,1W	
3530	4822 051 20472	4K70	5%	0,1W	
3531	4822 051 20101	100R00	5%	0,1W	
3532	4822 051 20101	100R00	5%	0,1W	
3533	4822 051 20759	75R00	5%	0,1W	
3534	4822 051 20008	0R00 JUMP (0805)			
3535	4822 117 11503	220E	1%	0.1W	
3536	4822 117 11503	220E	1%	0.1W	
3537	4822 116 83872	220E	5%	0,5W	
3538	4822 116 83961	6K8	5%		
3539	4822 116 83961	6K8	5%		
3540	4822 117 11503	220E	1%	0.1W	
3542	4822 117 11503	220E	1%	0.1W	
3543	4822 051 20471	470R00	5%	0,1W	
3544	4822 117 11503	220R	1%	0.1W	
3545	4822 116 52256	2K2	5%	0,5W	
3546	4822 116 52256	2K2	5%	0,5W	
3547	4822 051 20479	47R00	5%	0,1W	
3548	4822 051 20682	6K80	5%	0,1W	
3549	4822 051 20101	100R00	5%	0,1W	
3550	4822 051 20105	1M00	5%	0,1W	
3551	4822 051 20105	1M00	5%	0,1W	
3552	4822 051 20682	6K80	5%	0,1W	
3553	4822 051 20101	100R00	5%	0,1W	
3554	4822 051 20101	100R00	5%	0,1W	
3555	4822 051 20008	0R00 JUMP (0805)			
3556	4822 051 20474	470K00	5%	0,1W	
3557	4822 051 20104	100K00	5%	0,1W	
3560	4822 051 20008	0R00 JUMP (0805)			
3561	4822 051 20472	4K70	5%	0,1W	
3562	4822 051 20473	47K00	5%	0,1W	
3563	4822 051 20822	8K20	5%	0,1W	
3570	4822 116 83864	10K	5%	0,5W	
3571	4822 117 11383	12K	1%	0,1W	
3600	4822 116 52257	22K	5%	0,5W	
3601	4822 117 10833	10K	1%	0,1W	
3602	4822 051 20472	4K70	5%	0,1W	
3603	4822 051 20101	100R00	5%	0,1W	
3604	4822 116 52257	22K	5%	0,5W	
3605	4822 117 11449	2K2	1%	0,1W	
3606	4822 116 52195	47E	5%	0,5W	
3607	4822 051 20394	390K00	5%	0,1W	
3608	4822 117 11383	12K	1%	0,1W	
3609	4822 051 20822	8K20	5%	0,1W	
3610	4822 117 11449	2K2	1%	0,1W	
3611	4822 051 20101	100R00	5%	0,1W	for mono
3611	4822 051 20681	680R00	5%	0,1W	for stereo
3612	4822 117 11449	2K2	1%	0,1W	
3615	4822 051 20101	100R00	5%	0,1W	
3618	4822 100 12159	100K	30%	POT	
3619	4822 051 20158	1R50	5%	0,1W	
3620	4822 051 20473	47K00	5%	0,1W	
3622	4822 051 20335	3M30	5%	0,1W	
3623	4822 117 10833	10K	1%	0,1W	
3624	4822 051 20332	3K30	5%	0,1W	
3625	4822 051 20339	33R00	5%	0,1W	
3626	4822 051 20224	220K00	5%	0,1W	
3627	4822 051 20563	56K00	5%	0,1W	
3638	4822 051 20109	10R00	5%	0,1W	
3655	4822 051 20681	680R00	5%	0,1W	
3656	4822 116 83961	6K8	5%		
3657	4822 051 20391	390R00	5%	0,1W	
3702	4822 051 20101	100R00	5%	0,1W	
3703	4822 051 20101	100R00	5%	0,1W	
3704	4822 051 20182	1k80	5%	0,1W	
3705	4822 051 20223	22K00	5%	0,1W	
3706	4822 051 20182	1k80	5%	0,1W	
3707	4822 051 20101	100R00	5%	0,1W	
3708	4822 051 20101	100R00	5%	0,1W	
3709	4822 051 20101	100R00	5%	0,1W	
3712	4822 051 20272	2K70	5%	0,1W	
3715	4822 051 20122	1K20	5%	0,1W	
3723	4822 051 20224	220K00	5%	0,1W	
3725	4822 051 20333	33K00	5%	0,1W	
3726	4822 051 20273	27K00	5%	0,1W	
3729	4822 051 20391	390R00	5%	0,1W	
3730	4822 051 20183	18K00	5%	0,1W	
3731	4822 051 20183	18K00	5%	0,1W	
3732	4822 051 20391	390R00	5%	0,1W	
3735	4822 117 11448	180R	1%	0,1W	for mono SEC
3735	4822 051 20391	390R00	5%	0,1W	
3736	4822 051 20562	5K60	5%	0,1W	
3737	4822 051 20392	3K90	5%	0,1W	
3739	4822 051 20681	680R00	5%	0,1W	
3742	4822 100 12158	22K	30%	POT	
3744	4822 051 20154	150K00	5%	0,1W	
3747	4822 051 20391	390R00	5%	0,1W	for SECAM
3747	4822 051 20331	330R00	5%	0,1W	for SEC DK
3747	4822 051 20271	270E	5%	0,1W	for PAL
3748	4822 100 12156	4K7	30%	POT	for PLL adj.
3748	4822 100 12158	22K	30%	POT	for Bd. 1 adj.
3749	4822 051 20681	680R00	5%	0,1W	
3750	4822 051 20331	330R00	5%	0,1W	
3760	4822 051 10102	1K00	2%	0,25W	
3760	4822 051 20821	820R00	5%	0,1W	for PAL I
3761	4822 051 10102	1K00	2%	0,25W	
3762	4822 051 10102	1K00	2%	0,25W	
3764	4822 051 10102	1K00	2%	0,25W	for PAL
3764	4822 051 20821	820R00	5%	0,1W	for SECAM
3765	4822 051 20562	5K60	5%	0,1W	
3766	4822 051 20473	47K00	5%	0,1W	
3767	4822 051 20472	4K70	5%	0,1W	
3768	4822 051 20104	100K00	5%	0,1W	
3769	4822 051 20472	4K70	5%	0,1W	
3770	4822 051 20104	100K00	5%	0,1W	
3771	4822 051 20472	4K70	5%	0,1W	
3772	4822 051 20104	100K00	5%	0,1W	
3773	4822 051 20104	100K00	5%	0,1W	
3780	4822 051 20101	100R00	5%	0,1W	
3781	4822 051 20101	100R00	5%	0,1W	
3782	4822 051 20333	33K00	5%	0,1W	
3790	4822 051 20472	4K70	5%	0,1W	
3791	4822 051 20562	5K60	5%	0,1W	
3792	4822 051 20472	4K70	5%	0,1W	
3793	4822 051 20562	5K60	5%	0,1W	
3805	4822 051 20101	100R00	5%	0,1W	
3807	4822 051 20479	47R00	5%	0,1W	
3808	4822 051 20479	47R00	5%	0,1W	
3813	4822 051 20472	4K70	5%	0,1W	
3815	4822 117 10833	10K	1%	0,1W	
3816	4822 117 10833	10K	1%	0,1W	
3817	4822 117 10833	10K	1%	0,1W	
3818	4822 051 20153	15K00	5%	0,1W	
3819	4822 117 10833	10K	1%	0,1W	
3820	4822 117 10833	10K	1%	0,1W	
3821	4822 117 10833	10K	1%	0,1W	
3822	4822 051 20153	15K00	5%	0,1W	
3823	4822 117 10833	10K	1%	0,1W	
3824	4822 117 11449	2K2	1%	0,1W	
3825	4822 051 20472	4K70	5%	0,1W	
3826	4822 051 20153	15K00	5%	0,1W	
3827	4822 051 20104	100K00	5%	0,1W	
3828	4822 117 10833	10K	1%	0,1W	
3829	4822 117 10833	10K	1%	0,1W	
3850	4822 117 12708	39K	1%	0,1W	
3851	4822 051 20473	47K00	5%	0,1W	
3852	4822 051 20392	3K90	5%	0,1W	
3853	4822 051 20473	47K00	5%	0,1W	
3854	4822 051 20392	3K90	5%	0,1W	
3855	4822 051 20104	100K00	5%	0,1W	
3856	4822 051 20104	100K00	5%	0,1W	

⚠... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

3857	4822 051 20335	3M30	5%	0,1W
3858	4822 117 11449	2K2	1%	0,1W
3860	4822 051 20101	100R00	5%	0,1W
3861	4822 051 20101	100R00	5%	0,1W
3862	4822 051 20104	100K00	5%	0,1W
3863	4822 051 20104	100K00	5%	0,1W
3864	4822 051 20472	4K70	5%	0,1W
3865	4822 051 20472	4K70	5%	0,1W
3866	4822 051 20475	4M70	5%	0,1W
3867	4822 051 20475	4M70	5%	0,1W
3870	4822 051 20472	4K70	5%	0,1W
3871	4822 051 20223	22K00	5%	0,1W
3901	4822 051 20008	0R00 JUMP (0805)		
3902	4822 051 20008	0R00 JUMP (0805)		
3903	4822 051 20008	0R00 JUMP (0805)		
3905	4822 051 20008	0R00 JUMP (0805)		
3906	4822 051 20008	0R00 JUMP (0805)		
3907	4822 051 20008	0R00 JUMP (0805)		
3908	4822 051 20008	0R00 JUMP (0805)		
3910	4822 051 20008	0R00 JUMP (0805)		
3911	4822 051 20008	0R00 JUMP (0805)		
3912	4822 051 20008	0R00 JUMP (0805)		
3913	4822 051 20008	0R00 JUMP (0805)		
3915	4822 051 20008	0R00 JUMP (0805)		
3916	4822 051 20008	0R00 JUMP (0805)		
3917	4822 051 20008	0R00 JUMP (0805)		
3918	4822 051 20008	0R00 JUMP (0805)		
3919	4822 051 20008	0R00 JUMP (0805)		
3922	4822 051 20008	0R00 JUMP (0805)		
3923	4822 051 20008	0R00 JUMP (0805)		
3925	4822 051 20008	0R00 JUMP (0805)		
3926	4822 051 20008	0R00 JUMP (0805)		
3927	4822 051 20008	0R00 JUMP (0805)		
3928	4822 051 20008	0R00 JUMP (0805)		
3929	4822 051 20008	0R00 JUMP (0805)		
3930	4822 051 20008	0R00 JUMP (0805)		
3931	4822 051 20008	0R00 JUMP (0805)		
3941	4822 051 20008	0R00 JUMP (0805)		
3942	4822 051 20008	0R00 JUMP (0805)		
3943	4822 051 20008	0R00 JUMP (0805)		
3944	4822 051 20008	0R00 JUMP (0805)		
3945	4822 051 20008	0R00 JUMP (0805)		
3946	4822 051 20008	0R00 JUMP (0805)		
3947	4822 051 20008	0R00 JUMP (0805)		
3950	4822 051 20008	0R00 JUMP (0805)		
3951	4822 051 20008	0R00 JUMP (0805)		
3956	4822 051 20008	0R00 JUMP (0805)		
3960	4822 051 20008	0R00 JUMP (0805)		
3961	4822 051 20008	0R00 JUMP (0805)		
3962	4822 051 20008	0R00 JUMP (0805)		
3965	4822 051 20008	0R00 JUMP (0805)		
3966	4822 051 20008	0R00 JUMP (0805)		
3967	4822 051 20008	0R00 JUMP (0805)		
3970	4822 051 20008	0R00 JUMP (0805)		
3972	4822 051 20008	0R00 JUMP (0805)		
3973	4822 051 20008	0R00 JUMP (0805)		
3984	4822 051 20008	0R00 JUMP (0805)		
3985	4822 051 20008	0R00 JUMP (0805)		
3986	4822 051 20008	0R00 JUMP (0805)		
3988	4822 051 20008	0R00 JUMP (0805)		
3989	4822 051 20008	0R00 JUMP (0805)		
3990	4822 051 20008	0R00 JUMP (0805)		
3998	4822 051 20008	0R00 JUMP (0805)		
3999	4822 051 20008	0R00 JUMP (0805)		
4501	4822 117 12708	39K00	5%	0,1W for INST
4505	4822 117 10833	10K	1%	0,1W for STBY
4511	4822 117 10833	10K	1%	0,1W for STBY
4512	4822 117 12708	39K00	5%	0,1W for REC
4517	4822 051 20182	1K80	5%	0,1W for DOWN
4517	4822 117 10833	10K	1%	0,1W for STBY
4518	4822 117 12708	39K00	5%	0,1W for REC
4523	4822 117 10833	10K	1%	0,1W for STBY
4523	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4563	4822 117 10833	10K	1%	0,1W for STBY
4569	4822 051 20472	4K70	5%	0,1W for UP
4570	4822 117 12708	39K00	5%	0,1W for REC
4579	4822 051 20182	1K80	5%	0,1W for DOWN
4579	4822 117 12708	39K00	5%	0,1W for INST
4580	4822 117 12708	39K00	5%	0,1W for REC
4583	4822 117 10833	10K00	1%	0,1W for STBY
4583	4822 051 20472	4K70	5%	0,1W for UP
4583	4822 051 20182	1K80	5%	0,1W for DOWN
4591	4822 117 12708	39K00	5%	0,1W for INST
4591	4822 051 20182	1K80	5%	0,1W for DOWN
4595	4822 117 12708	39K00	5%	0,1W for INST
4595	4822 051 20472	4K70	5%	0,1W for UP
4596	4822 051 20008	0R00 JUMP (0805)		for EJECT
4596	4822 117 12708	39K00	5%	0,1W for REC
4609	4822 051 20182	1K80	5%	0,1W for DOWN
4653	4822 051 20182	1K80	5%	0,1W for DOWN
4659	4822 051 20182	1K80	5%	0,1W for STOP
4559	4822 117 12708	39K00	5%	0,1W for INST
4660	4822 051 20472	4K70	5%	0,1W for REW
4660	4822 051 20182	1K80	5%	0,1W for STOP
4660	4822 051 20183	18K00	5%	0,1W for PLAY
4665	4822 051 20472	4K70	5%	0,1W for UP
4671	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4671	4822 051 20182	1K80	5%	0,1W for DOWN
4671	4822 051 20472	4K70	5%	0,1W for UP
4672	4822 051 20183	18K00	5%	0,1W for PLAY
4678	4822 117 10833	10K	1%	0,1W for WIND
4683	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4683	4822 051 20472	4K70	5%	0,1W for UP
4684	4822 117 12708	39K00	5%	0,1W for REC
4740	4822 051 20472	4K70	5%	0,1W for REW
4745	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4746	4822 051 20472	4K70	5%	0,1W for REW
4752	4822 051 20472	4K70	5%	0,1W for REW
4757	4822 051 20008	0R00 JUMP (0805)		for ST/EJ
4758	4822 051 20183	18K00	5%	0,1W for PLAY
4763	4822 117 12708	39K00	5%	0,1W for INST
4764	4822 051 20183	18K00	5%	0,1W for PLAY
4764	4822 117 10833	10K	1%	0,1W for WIND
4764	4822 117 12708	39K00	5%	0,1W for REC
4772	4822 117 10833	10K	1%	0,1W for WIND
4772	4822 051 20472	4K70	5%	0,1W for REW

COILS

5000	4822 157 11234	10μH	5%	
5001	4822 152 20677	10μH		
5002	4822 152 20677	10μH		
5004	4822 157 11142	47μH	5%	
5005	4822 157 11145	150μH	5%	
5020	4822 157 10972	15μH	5%	
5026	4822 157 11228	LAN02TB101J		
5036	4822 157 11149	56μH	5%	
5080▲	4822 157 11226	47μH	5%	
5100	4822 157 63661	FIL LC VAR 4M286		5VS
5101	4822 157 10972	15μH	5%	
5102	4822 157 11149	56μH	5%	
5103	4822 157 63661	FIL LC VAR 4M286		5VS
5104	4822 157 11227	150μH	5%	
5105	4822 157 11227	150μH	5%	
5106	4822 157 11151	330μH	5%	
5107	4822 157 11228	LAN02TB101J		
5108	4822 157 63659	FIL LC VAR 1G072		5V2
5111	4822 157 11229	15μH	5%	
5112	4822 157 10972	15μH	5%	
5113	4822 157 11145	150μH	5%	
5114	4822 157 10972	15μH	5%	
5115	4822 157 63717	6,8μH		
5130	4822 157 71206	BLM21A10PT		
5150▲	4822 157 53906	47μH		
5200	4822 152 20677	10μH		
5300▲	4822 157 53005	0.33μH	20%	
5350	4822 157 51462	10μH		
5351	4822 157 71461	22μH	10%	
5352▲	4822 157 10454	Line filter		

▲... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

5353⚠	4822 146 10786	SRW32ES-E01(TRAFO)
5353/80	4822 466 11688	ISOL. PLATE (TRAFO 5353)
5354	4822 157 51462	10µH
5355⚠	4822 157 53005	0,33µH
5358	4822 157 60147	2,2µH
5361	4822 157 52286	22µH
5368	4822 157 60147	2,2µH
5400	4822 152 20677	10µH
5402	4822 152 20677	10µH
5601	4822 157 11249	10.000UH 5%
5602	4822 157 11151	330µH 5%
5603	4822 157 53531	Coil
5604	4822 157 11251	3,3µH 10%
5605	4822 157 71206	BLM21A10PT
5700	4822 157 71206	BLM21A10PT
5702	4822 152 20677	10µH
5703	4822 152 20677	10µH
5705	4822 152 20677	10µH
5720	4822 157 11231	LAN02TB1R0J
5721	4822 157 70877	H292ONS-6785NK
5725	4822 157 70877	H292ONS-6785NK
5726	4822 051 20008	0R00 JUMP (0805)
5740	4822 157 11232	12µH 5% for SECAM LL'
5740	4822 157 11229	15µH 5% for PAL
5741	4822 157 11223	39µH 5%
5780	4822 157 70038	10mH 5%
5800	4822 157 11233	LAN02TB330J
5801	4822 152 20677	10µH
5810	4822 157 11234	10µH 5%
5831	4822 157 11235	LANO2TB220J

DIODES

6100	4822 130 32778	1SS133
6135	4822 130 34197	BZX79-B12 (MTZJ12C)
6250	4822 130 34197	BZX79-B12
6299	4822 130 10869	RB441
6350	4822 130 30842	BAV21
6351	4822 130 31983	BAT85
6352	4822 130 42488	BYD33D
6353	4822 130 42488	BYD33D
6354	4822 130 80858	1N5062
6355	4822 130 42488	BYD33D
6356	4822 130 42488	BYD33D
6357	4822 130 10871	DIODE RECT SBYV2
6358	5322 130 31938	BYV27-200
6359	4822 130 32715	SB340 for stereo
6359	4822 130 83909	BYW98-200RL for mono
6360	4822 130 83147	DF06M
6371	4822 130 42488	BYD33D
6372	4822 130 34142	BZX79-B33
6460	4822 130 10231	SET: 2x Sens + 1x Led
6500	4822 130 34197	BZX79-B12
6501	4822 130 34197	BZX79-B12
6502	4822 130 34197	BZX79-B12
6509	4822 130 34197	BZX79-B12
6510	4822 130 34197	BZX79-B12
6511	4822 130 10884	MTZJ18C
6516	4822 130 34278	BZX79-B6V8
6530	4822 130 10654	BAT254
6601	4822 130 30861	BZX79-B7V5
6760	4822 130 10414	BA792
6761	4822 130 10414	BA792

TRANSISTORS & IC's

7000	4822 130 42353	BSF19-F2
7001	4822 130 10872	MMUN2112LT1
7002	4822 130 60511	BC847B
7003	4822 209 15526	LC89980M
7004	4822 130 42353	BSF19-F2
7005	5322 130 60508	BC857B
7006	4822 130 60511	BC847B
7007	4822 209 15527	LA71525M
7008	5322 130 60508	BC857B
7009	4822 130 10872	MMUN2112LT1
7011	4822 130 60511	BC847B
7020	4822 130 63732	MMUN2212
7021	5322 130 60508	BC857B
7080	4822 209 90421	STV5712
7085	4822 130 60511	BC847B
7100	4822 130 60511	BC847B
7101	4822 130 60511	BC847B
7102	4822 209 73852	PMBT2369
7103	4822 130 60511	BC847B
7104	4822 130 63732	MMUN2212
7105	5322 130 60508	BC857B
7106	4822 130 60511	BC847B
7110	4822 209 90189	TDA4722/V2
7150	4822 209 13121	STV5742
7151	4822 209 15548	STV5744AD
7153	4822 130 60511	BC847B
7201	4822 209 15516	TMP87CS71F QDCE1-xP
7201	4822 209 15517	TMP87CS71F QDCE2-xU
7201	4822 209 15518	TMP87CS71F QDCE3-xU
7201	4822 209 15521	TMP87CS71F QDCH1-xP
7201	4822 209 15519	TMP87CS71F QDCH2-xU
7201	4822 209 15528	TMP87CS71F QDCH3-xU
7201	4822 209 15549	TMP87CS71F QDCH4-xU
7201	4822 209 15573	TMP87CS71F QDCH5-xU
7202	4822 135 00115	25U39113SA (Display)
7203	4822 212 30842	TSOP1736 (IR-receiver)
7231	4822 130 63732	MMUN2212
7300	4822 209 13126	TDA5241
7301	4822 130 10872	MMUN2112LT1
7350⚠	4822 130 63794	STP3NA60
7350/2	4822 255 10387	COOLING BLOCK (HEAT SINK)
7350/3	4822 502 14482	SCREW M3x6
7351⚠	4822 209 32126	SOC1012T (OPTO)
7352	4822 209 81397	TL431CLpST
7353	4822 130 10214	STD17N06
7354	4822 209 90025	MC44603P
7356	4822 130 60511	BC847B
7357	4822 130 10214	STD17N06
7358	4822 130 40995	BD438
7359	4822 130 60511	BC847B
7400	4822 209 15529	TMP91C642AF QTDP2-xU
7420	4822 209 90313	L4812CV for stereo
7420	4822 209 81726	MC7812CT for mono
7440	4822 209 30146	L2722
7455	4822 130 10872	MMUN2112LT1
7456	4822 130 60511	BC847B
7457	4822 130 60511	BC847B
7458	4822 130 60511	BC847B
7460	4822 209 30836	SAA1310/N2
7461	4822 130 10231	SET: 2x Sens + 1x Led
7462	4822 130 10231	SET: 2x Sens + 1x Led
7463	4822 130 41344	BC337-40
7464	4822 130 10233	TCRT5000L
7465	4822 130 10233	TCRT5000L
7466	4822 130 10234	TCST1030L
7467	4822 130 60511	BC847B
7468	4822 130 60511	BC847B
7469	4822 130 60511	BC847B
7500	4822 130 60511	BC847B
7501	5322 130 60508	BC857B
7502	4822 130 60511	BC847B
7505	4822 130 63732	MMUN2212
7506	4822 130 10872	MMUN2112LT1

⚠... Safety component, use only this type

Motherboard PAL, SECAM, MONO, STEREO

7507	4822 209 90016	STV6400	
7510	5322 130 42136	BC848C	
7511	4822 130 42615	BC817-40	
7512	5322 130 42136	BC848C	
7513	5322 209 14481	HEF4053BT	
7513	5322 209 14481	HEF4053BT	
7540	4822 209 15504	SDA5650	for VPS/PDC
7540	4822 209 32728	SDA5642.6	for VPS only
7600	4822 130 60373	BC856B	
7601	5322 130 60159	BC846B	
7602	5322 130 60159	BC846B	
7603	4822 130 60511	BC847B	
7604	4822 130 41715	BC328-40	
7609	4822 130 42615	BC817-40	
7720	4822 209 90288	TDA9800T/V3	
7721	4822 209 90018	TDA9812T	for SECAM mono
7721	4822 209 90431	TDA9813T/V2	for PAL FM stereo
7721	4822 209 90452	TDA9814T/V3	for SECAM stereo
7722	5322 209 14481	HEF4053BT	
7723	5322 130 60508	BC857B	
7724	5322 130 42136	BC848C	
7725	4822 130 60511	BC847B	
7726	4822 130 63732	MMUN2212	
7728	4822 130 10802	BSS138	
7729	4822 130 60511	BC847B	
7730	4822 130 60511	BC847B	
7731	4822 130 63732	MMUN2212	
7780	4822 209 32501	TDA9840T/V2	
7800	4822 209 15524	LC74781-9663	
7810	4822 130 42353	BSF19-F2	
7850	4822 209 15525	TDA9604H/N1	
7851	4822 130 60511	BC847B	
7852	4822 130 60511	BC847B	
7860	4822 209 60177	LM339D	
7890	4822 209 33113	ST24C08CB6	for GEMSTAR
7890	4822 209 30953	ST24C04CB6	

QNIC

MISCELLANEOUS

1700⚠	4822 071 52501	Fuse	250mA
1710	4822 242 10433	Crystal	8,192 MHz
1970	4822 265 10943	CONN	11P

CAPACITORS

2700	4822 122 33172	390pF	5%	50V
2701	5322 122 32448	10pF	5%	50V
2703	4822 126 10002	100nF	20%	25V
2704	4822 122 33575	220pF	5%	50V
2705	4822 124 22826	10µF		16V
2706	4822 124 22826	10µF		16V
2707	4822 126 13061	220nF	20%	25V
2708	5322 122 32654	22nF	10%	63V
2709	5322 122 32531	100pF	5%	50V
2710	5322 122 32531	100pF	5%	50V
2714	4822 124 23027	47µF		6.3V
2716	4822 124 23027	47µF		6.3V
2718	4822 126 10002	100nF	20%	25V
2719	4822 122 33175	2,2nF	20%	50V
2720	4822 122 33175	2,2nF	20%	50V
2721	4822 126 13061	220nF	20%	25V
2722	4822 122 33175	2,2nF	20%	50V
2723	4822 122 33175	2,2nF	20%	50V
2725	4822 124 23053	1µF	20%	63V
2726	4822 122 33797	47nF	20%	50V
2727	4822 124 23027	47µF		6.3V
2728	4822 126 10002	100nF	20%	25V
2729	4822 124 22826	10µF		16V
2731	4822 124 22826	10µF		16V
2732	4822 126 10002	100nF	20%	25V
2733	4822 124 23027	47µF		6.3V
2734	5322 122 32654	22nF	10%	63V
2736	4822 126 10002	100nF	20%	25V
2752	4822 126 13061	220nF	20%	25V
2753	4822 126 13061	220nF	20%	25V

RESISTORS

3700	4822 051 10102	1K00	2%	0,25W
3701	4822 051 20101	100R00	5%	0,1W
3702	4822 051 20223	22K00	5%	0,1W
3703	4822 051 20104	100K00	5%	0,1W
3704	4822 117 11449	2K2	1%	0,1W
3705	4822 051 20392	3K90	5%	0,1W
3707	4822 116 52276	3K9	5%	0,5W
3708	4822 117 11449	2K2	1%	0,1W
3710	4822 051 20334	330K00	5%	0,1W
3711	4822 116 52175	100E	5%	0,5W
3712	4822 116 52175	100E	5%	0,5W
3713	4822 051 20182	1K80	5%	0,1W
3714	4822 051 20333	33K00	5%	0,1W
3715	4822 117 10833	10K	1%	0,1W
3720	4822 117 10833	10K	1%	0,1W
3721	4822 117 10833	10K	1%	0,1W
3722	4822 117 10833	10K	1%	0,1W
3723	4822 117 10833	10K	1%	0,1W
3790	4822 051 20008	0R00	JUMP (0805)	
3792	4822 051 20008	0R00	JUMP (0805)	
3793	4822 051 20008	0R00	JUMP (0805)	
3794	4822 051 20008	0R00	JUMP (0805)	
3795	4822 051 20008	0R00	JUMP (0805)	
3796	4822 051 20008	0R00	JUMP (0805)	
3797	4822 051 20008	0R00	JUMP (0805)	

COILS

5700	4822 157 63717	6,8MµH
5703	4822 157 71206	BLM21A10
5704	4822 157 71206	BLM21A10
5705	4822 157 71206	BLM21A10
5706	4822 157 71206	BLM21A10
5707	4822 157 71206	BLM21A10

DIODES

6700	4822 130 10652	BB149
6701	4822 130 83757	BAS216

TRANSISTORS & IC's

7700	4822 209 14809	SAA7284Z
7701	5322 209 61487	LM358N

⚠ ... Safety component, use only this type

CABLES & SUB MODULS

CABLES

8001	4822 320 11889	FFC TD1-1961
8002	4822 323 10374	CABLE TREE TD2-1962
8003	4822 320 11891	FFC TD3-1944
8004	4822 320 11892	FFC TD4-1930
8005	4822 320 11888	FFC 1901-1945
8006	4822 320 12343	FFC 1103-1711
8007	4822 320 11891	FFC 1710-1750
8008	4822 323 10373	ESD-GND CONN.
	▲ 4822 321 10886	MAINS CORD (+FUSE) for UK
	▲ 4822 321 10249	MAINS CORD
	4822 320 50377	ANTENNA cable
	4822 321 63002	SCART cable

SUB MODULS

4822 214 12238	CINCH print rear
4822 214 12248	QKP21 Shuttle print
4822 214 12744	ACP1 CINCH print front

▲ ... Safety component, use only this type